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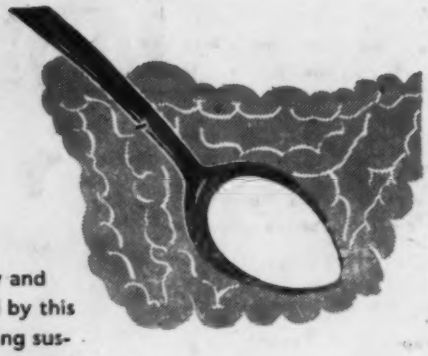

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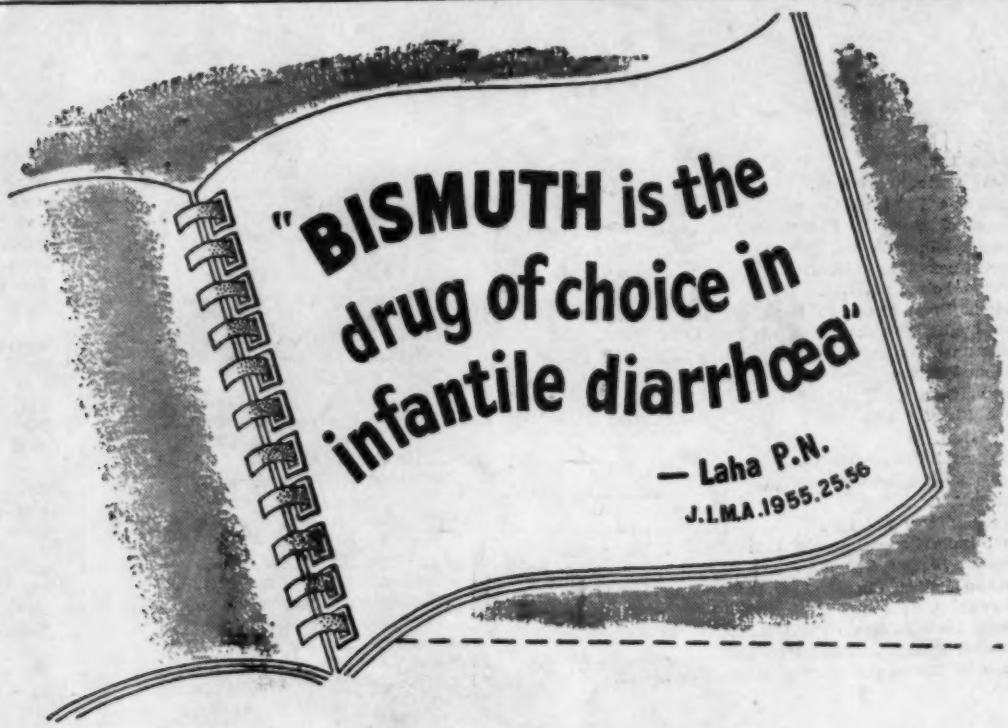

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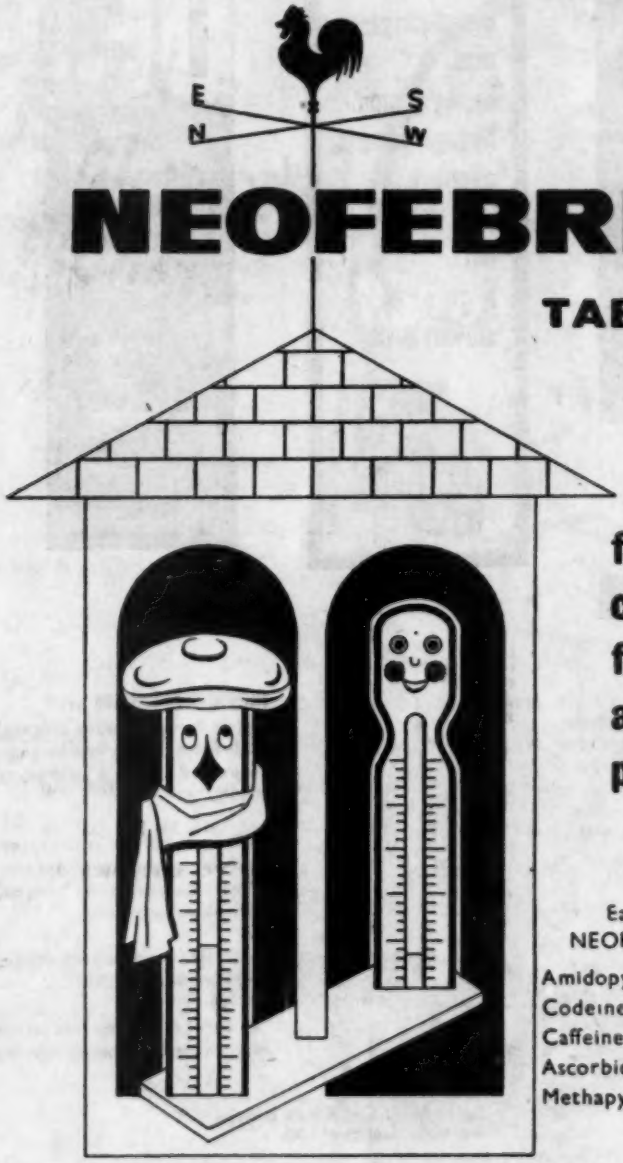

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2. Odell, W. D., et al.: A.M.A. Arch. Int. Med. 102:520, 1958.
3. Pearlman, W.: Phenformin Symposium, Houston, Feb. 1959.
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6. Miller, E. C.: Phenformin Symposium, Houston, Feb. 1959.
7. Krall, L. P.: Applied Therapeutics 2:137, 1960.

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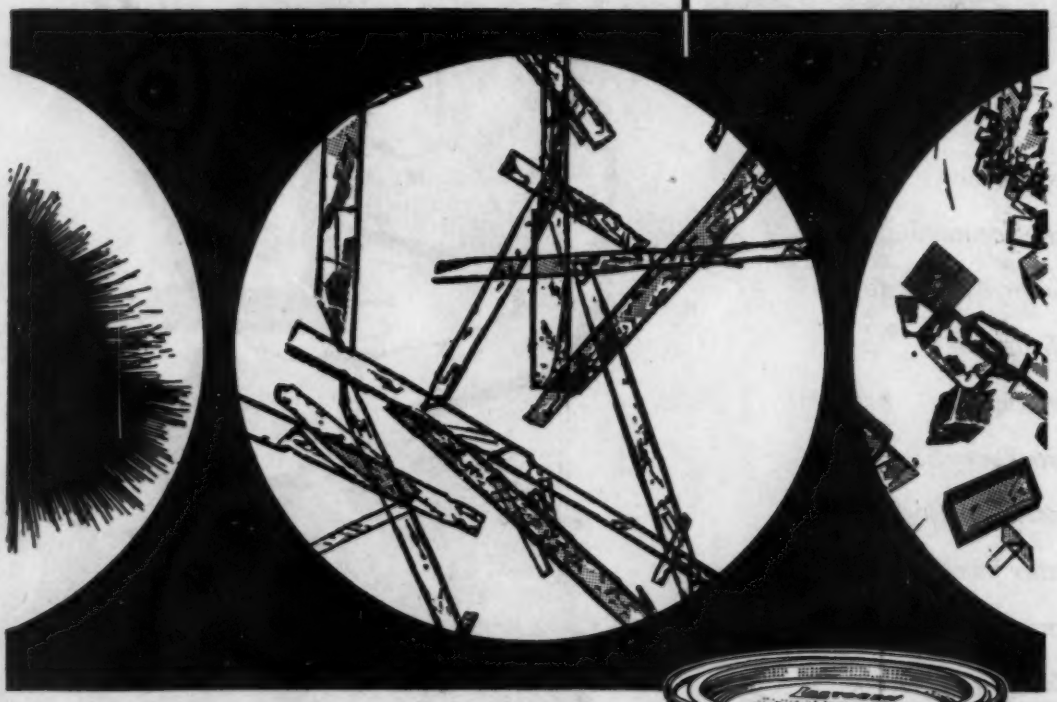

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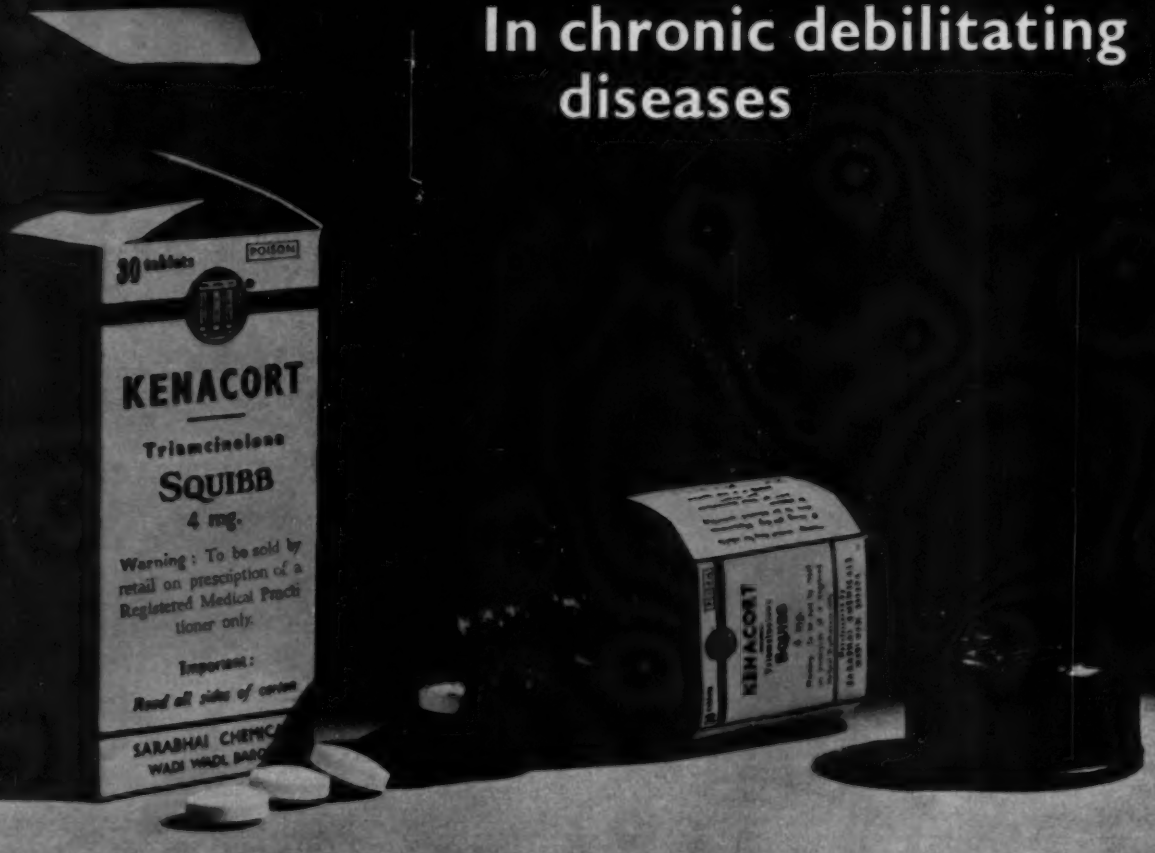

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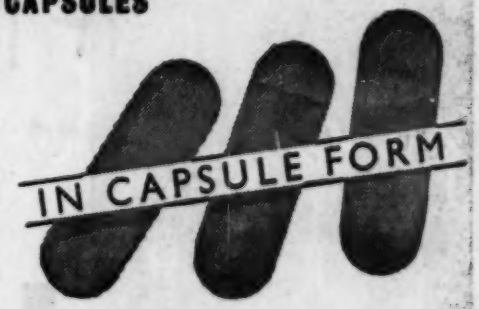

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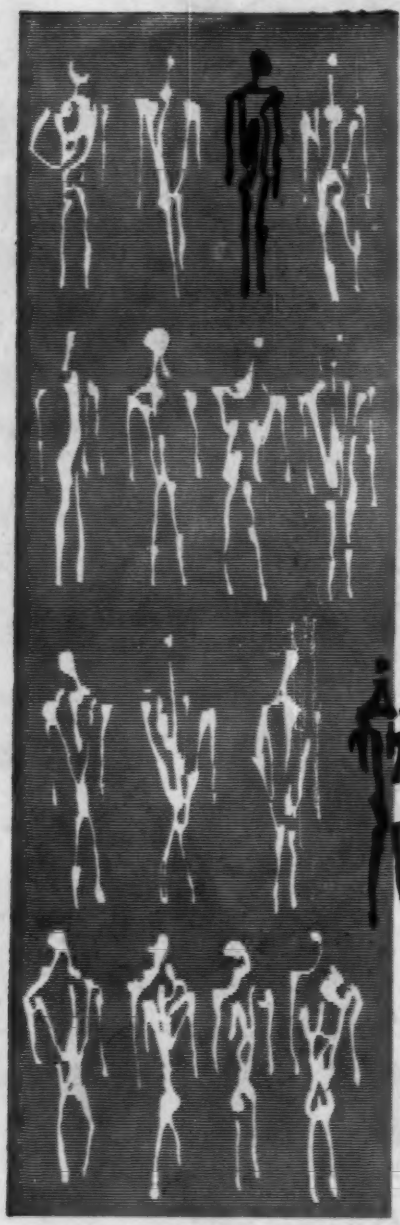

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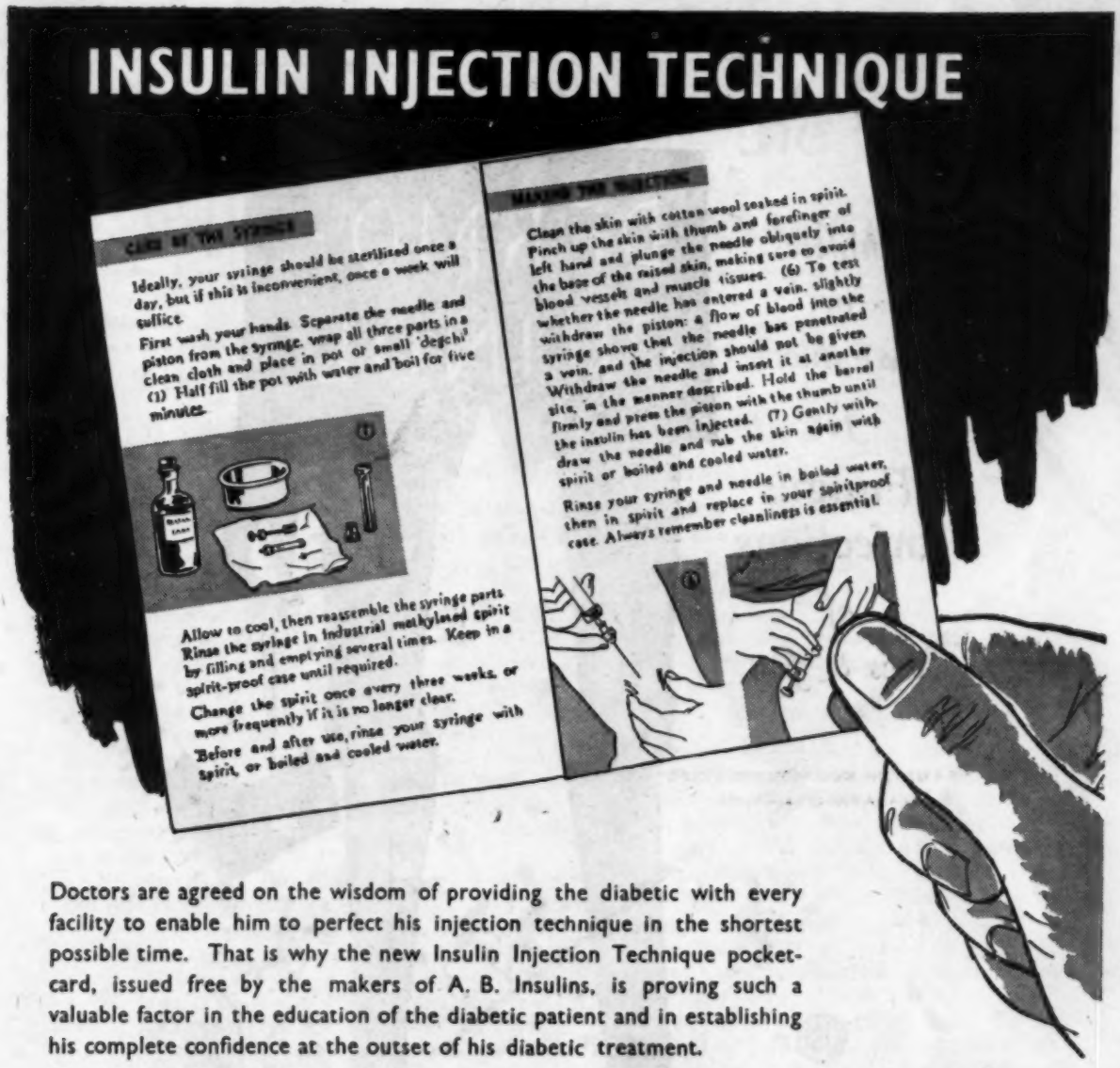
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(1) Half fill the pot with water and boil for five minutes.
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Clean the skin with cotton wool soaked in spirit. Pinch up the skin with thumb and forefinger of left hand and plunge the needle obliquely into the base of the raised skin, making sure to avoid blood vessels and muscle tissues. (6) To test whether the needle has entered a vein, slightly withdraw the piston: a flow of blood into the syringe shows that the needle has penetrated a vein, and the injection should not be given. Withdraw the needle and insert it at another site, in the manner described. Hold the barrel firmly and press the piston with the thumb until the insulin has been injected. (7) Gently withdraw the needle and rub the skin again with spirit or boiled and cooled water.
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ORIGINAL ARTICLES

ADENOMAS OF THE PITUITARY GLAND

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Adenomas of the pituitary gland do not differ much from adenomas of other glands of the human body. But, the unique anatomical peculiarities of the gland as regards its position inside a small and practically rigid intrasellar space, its close relation to the important structures, e.g., optic nerves, cavernous sinus and its contents, hypothalamus, etc., and its physiological property as an endocrine gland produce characteristic and variegated symptomatology to reveal the presence of an adenoma.

Neurosurgically the adenomas may be classified into two main groups:

A. True intrasellar adenomas—This group only manifests endocrinological disturbances which vary according to the histological character of the tumours, e.g., eosinophil adenomas, basophil adenomas, chromophobe adenomas and mixed adenomas.

B. Intrasellar adenomas with extensions—This group may be further sub-divided into:

1. Intrasellar tumour with commencing extrasellar extensions affecting the optic nerves or the cavernous sinus and its contents. Affection of the optic nerve is the prime indication for operative interference.
2. Intrasellar tumours producing gross extrasellar extension with resultant increased intracranial tension, hypothalamic disturbances, etc.
3. Intrasellar tumours with downward extension through the sphenoid sinus into the nasopharynx.

REVIEW OF LITERATURE

Adenomas of the anterior lobe of the hypophysis are the most common of all intracranial neoplasms next to gliomata (Bailey, 1932). The greatest incidence of this disease occurs during the fourth and fifth decades, but actually no age is really exempt and the distribution is equal between males and females (Soffer, 1956).

Jefferson (1940, 1955) described invasion of the cavernous sinus by adenomas of the anterior pituitary, both acidophilic and chromophobe types. Such invasions were verified by examination of tissues in 13 out of 14 cases. He found infiltrations of the sinus to such an extent that in some instances the nerves were infiltrated and even the carotid artery in one case.

Foix (1922) reported a case in which trigeminal pain was associated with an intrasellar tumour.

Walsh (1957) reported a case of pituitary adenoma which ruptured into the sphenoid sinus and ethmoid sinuses producing unilateral nasal obstruction.

According to Soffer (*loc. cit.*) the non-endocrinological symptomatology of chromophobe tumours are chiefly the following:

1. Sellar enlargement and destruction of clinoid processes.

2. Visual disturbances: (a) Loss of visual acuity, blurring of vision, occasional diplopia. (b) Bitemporal hemianopsia with constriction of visual field. (c) Pupillary irregularities. (d) Unilateral or bilateral optic atrophy.

3. Abnormalities in the spinal fluid: (a) Increase in total protein. (b) Slight increase in sugar. (c) Occasional increase in spinal fluid pressure.

4. Headache.

5. Impairment or loss of olfactory sense.

6. Episodes of nausea.

The following endocrinological symptomatology of chromophobe tumours is summarised by German (1944) from a series of 100 cases of Harvey Cushing.

> Menstrual disturbances —97 per cent, subnormal B.M.R.—76 per cent, fine dry skin—56 per cent, scanty hair—53 per cent, diminished libido—29 per cent, diminished sexual potency—28 per cent, somnolence—22 per cent, polydypsia—12 per cent, polyuria—9 per cent, glycosuria—2 per cent.

According to Putnam and Davidoff (1938) the chief non-endocrine symptom of eosinophil adenoma is frequent headache. Next in order come the visual affections including loss of acuity, blurring, diplopia, contraction of visual fields, bitemporal and homonymous hemianopsias.

The following endocrinological symptomatology of eosinophil tumours is summarised by Davidoff (1926), from a series of 100 cases of Harvey Cushing:

> Enlargement of acral parts—100 per cent, menstrual disturbances—87 per cent, increased B.M.R.—70 per cent, hypertrichosis—53 per cent, diminished libido—38 per cent, polyphagia—28 per cent, polydipsia—25 per cent, glycosuria (diabetes mellitus in 12 cases)—25 per cent.

Until recently basophil pituitary adenomas were not much taken into neurosurgical considerations. But, Luft and Olivecrona (1953) successfully operated upon a typical case of basophil pituitary adenoma.

Pituitary adenomas occasionally tend to undergo vascular changes such as massive haemorrhage or infarction. The resulting clinical syndrome is dramatic and puzzling. There is acute onset of grave intracranial signs such as subarachnoid or intracerebral haemorrhage. Blindness or extraocular palsies may rapidly develop (List *et al*, 1952). Smith and Bucy (1953) reported a case having an intrasellar cyst lined with columnar and cuboidal epithelium. The symptoms and findings were suggestive of a chromophobe adenoma.

Toennis *et al* (1952) observed postoperative mortality of 10·4 per cent in inoperable cases and 5·8 per cent in operable cases in their series of 264 cases of operated adenomas. They confirm the unfavourable prognosis in adenomas with disorders of the ocular muscles.

Materials

Out of 155 histologically verified cases of brain tumour, 28 cases of pituitary adenoma have been treated during the last six years in the Neurology Department of S.S.K.M. Hospital, Calcutta. All the cases were roentgenologically investigated some having angiographic studies.

Results

The clinical features of these 28 cases and the results of the investigations are presented in Table 1.

Four cases (Cases 17, 19, 20 and 22) revealing peculiar features have been reported in detail:

Case Reports

Case 1 (Case No. 17)—T. K., male, aged 11, was admitted on 22-6-59 with complaints of headache for the last 6 months, and an unusually rapid growth in the

Fig. 1—Photograph of the Patient with a Normal Boy of the Same Age on his Left. The Left-sided Ophthalmoplegia in the Patient is Obvious.

TABLE 1—SHOWING CLINICAL FEATURES AND RESULTS OF INVESTIGATION OF THE CASES STUDIED

Serial No.	Name, age & sex	Clinical features	Investigations	Treatment	Results	Histological characteristics of the tumours
1	S.D., 35 F	Headache, bitemporal hemianopsia, optic atrophy, acromegaly with prognathism	X-ray skull—enlarged sella. Normal ventriculogram	Operative	Postoperative death due to hyperpyrexia	Not available
2	V.B., 57 F	Headache, vomiting, acromegalic features and prognathism. No field defects	Enlarged sella, with hyperostosis frontalis interna	Radiotherapy	No follow-up available	—
3	P.N.P., 37 M	Headache, acromegaly and prognathism. No visual disturbance	Enlarged sella. No field defects	—do—	Patient doing well	—
4	B.G., 32 F	Headache, nausea, gross acromegalic features. No visual disturbance	—do—	—do—	No relief of headache	—
5	S.N.C., 42 M	Progressive narrowing of the fields of vision	Enlarged sella, temporal field defects in perimetry	Operative	Vision improved	Chromophobe adenoma
6	B.L., 55 M	Headache, skin changes, hypotrichosis, narrowing of the fields of vision	Enlarged sella, temporal field defects in perimetry	—do—	—do—	—do—
7	J.R., 40 M	Headache, loss of eye sight (total amaurosis), primary optic atrophy B.E.	Enlarged sella	—do—	No improvement of vision	—do—
8	A.S., 28 M	Headache, dimness of vision, skin changes, primary optic atrophy	Enlarged sella (moderate), loss of temporal fields in perimetry	—do—	Practically no improvement of vision	—do—
9	J.D., 30 F	Headache, vomiting, acromegalic features, visual impairment, amenorrhoea, primary optic atrophy	Enlarged sella, L.A.S. showed filling defect of the anterior part of the 3rd ventricle —gross suprasellar involvement. Left carotid angiography showed displacement of the initial half of the A.C.A. to the left side	—do—	Postoperative death due to hyperpyrexia	Eosinophil adenoma
10	G.L.M., 40 M	Progressive dimness of vision, skin changes	Marked sellar enlargement with destruction of the clinoids	—do—	No visual improvement	Chromophobe adenoma
11	M.L., 38 M	Headache, bitemporal hemianopsia, mild acromegalic features	Sellar enlargement, bitemporal perimetric defect	—do—	Complete visual recovery	—do—

TABLE 1—*Contd.*

Serial No.	Name, age & sex	Clinical features	Investigations	Treatment	Results	Histological characteristics of the tumours
12	S.L.B., 37 M	Severe headache, prominent acromegalic features, presence of cutis vertices gyrata, general weakness, no field defect	Sellar enlargement, hyperostosis of the cranial vault	—do—	No improvement of headache and weakness	Eosinophil adenoma
13	S.B., 50 M	Headache, dimness of vision, polyuria, skin changes	Gross enlargement of sella, bitemporal field lose on perimetry	—do—	Vision markedly improved, headache not improved, symptoms of mild hypopituitarism after one year	Mixed adenoma (eosinophil and chromophobe)
14	A.N.K., 42 M	Gradual enlargement of the size of the right hand, progressive dimness of vision, sudden loss of bitemporal vision, mild acromegalic features	Sellar enlargement, bitemporal field defect	—do—	Improvement of vision within 24 hours of operation	Eosinophil adenoma with haemorrhagic cyst
15	J.G., 30 F	Headache, vomiting, amenorrhoea, dimness of vision, acromegalic features	Sellar enlargement, bitemporal field defects	—do—	Vision improved, no improvement of headache, menstruation started after 2 months, postoperative course complicated with left-sided hemiparesis which disappeared in 3 weeks	Eosinophil adenoma
16	N.C.S., 26 M	Headache, gradual dimness of vision leading to almost complete loss of vision in the left eye, primary optic atrophy B.E., hypotrichosis, hypogonadism, dwarfism (Loraine-Levi)	Sellar enlargement, bitemporal hemianopsia	—do—	Postoperative death due to hyperpyrexia (107°F)	Chromophobe adenoma
*17	T.K., 11 M	Headache, left-sided sudden ophthalmoplegia, gigantism (ht. 5 ft. 9 in.) hypotrichosis, left amaurosis	Bullous enlargement of the sella, angiographic and ventriculographic changes	—do—	Complete recovery of ophthalmoplegia, recurrence after one year, re-operated and died due to hyperpyrexia	Eosinophil adenoma with huge haemorrhagic cyst

TABLE 1—*Contd.*

Serial No.	Name, age & sex	Clinical features	Investigations	Treatment	Results	Histological characteristics of the tumours
18	P.D., 35 F	Dimness of vision, amenorrhoea, mild acromegalic features, bilateral 6th nerve paralysis, hypotrichosis	Sellar enlargement, destruction of posterior clinoids, bitemporal hemianopsia, increased sugar tolerance	—do—	Vision improved, menstruation started after 4 weeks	Mixed adenoma (eosinophil and chromophobe)
*19	T.K.G., 40 M	Progressive loss of temporal vision, diminished libido, hypotrichosis, skin changes	Enlarged sella, bitemporal hemianopsia, onset of primary optic atrophy left eye	—do— (No tumour tissue found, sellar cavity empty and could be negotiated through a ragged opening in diaphragma sellae)	Complete recovery from symptomatology	—
*20	B.M., 45 M	Progressive loss of temporal vision with dimness of vision in the left eye, lack of libido, hypotrichosis, skin changes	Huge enlargement of the sella, angiographically superolateral deviation of the 1st part of the left A.C.A., bitemporal field defects more on the left side	—do—	Complete recovery of temporal field loss, vision in the left eye markedly improved	Chromophobe adenoma
21	S.S., 35 F	Rapid loss of vision in both eyes, headache, vomiting, progressive somnolence	Enlarged sella, angiographically gross superolateral deviation of the 1st part of the left A.C.A.	—do— (Huge suprasellar tumour detected, only biopsy material taken)	Death due to cerebral oedema after 24 hours	Eosinophil adenoma
*22	S.P., 30 M	Headache, dimness of vision, progressive enlargement of the acral parts, sudden total ophthalmoplegia of the left eye, progressive somnolence, progressive lack of libido	Enlarged sella, left temporal field defect, no angiographic changes	Non-operative	Vision improved and ophthalmoplegia recovered after a grave crisis of the case	—
23	J.B.C., 34 M	Acromegaly, dimness of vision, lack of libido, skin changes	Huge sellar enlargement, bitemporal field loss	Refused operation, advised radiation therapy	Vision markedly improved after radiation therapy	—
24	A.B.D., 34 M	Left temporal loss of vision, lack of libido, hypotrichosis, very marked skin changes	Enlarged sella, left temporal field loss, right field normal	Operative	Field defect improved on the 2nd day of operation	Chromophobe adenoma

* Cases marked with an asterisk have been described in the text in detail.

TABLE 1—*Contd.*

Serial No.	Name, age & sex	Clinical features	Investigations	Treatment	Results	Histological characteristics of the tumours
25	K.S., 43 F	Acromegalic features, amenorrhoea, no visual changes	Slight enlargement of sella	No operation advised	—	—
26	B.D., 33 F	Dimness of vision, amenorrhoea	Enlarged sella, temporal field defects, deviation of left A.C.A. at its commencement to the left	Operative	Vision not yet improved, menstruation started within a week of the operation	Chromophobe adenoma
27	H.S., 36 M	Progressive enlargement of acral parts, progressive dimness of vision, lack of libido	Enlarged sella, primary optic atrophy B.E., vision practically nil	Non-operative (radiation therapy advised)	—	—
28	A.M., 44 F	Progressive enlargement of acral parts, amenorrhoea, right total ophthalmoplegia	No field defect, enlarged sella with gross internal hyperostosis of the skull, no angiographic changes	Non-operative (radiation therapy advised)	—	—

skeleton during the past two years. About 5½ months ago he had an attack of fever which kept him in a semiconscious state for about 5 or 6 days. A few days later he noticed that he could neither raise his left upper eyelid, nor move the left eyeball and see through the left eye.

On examination the patient appeared very tall for his age. His height was 5 ft. 9 inches (Fig. 1). He had enlargement of his acral parts.

Neurologically there was amaurosis of the left eye, complete ophthalmoplegia of the left side, hypaesthesia of the left half of the face including the cornea and the conjunctiva.

Roentgenologically there were: 1. Bullous enlargement of the sella turcica; left carotid angiogram showed ventral and lateral displacement of the carotid siphon—left parasellar space-occupying lesion (Fig. 2, *vide* Plate).

2. The ventriculogram showed characteristic contrast of air in the cisterna chiasmaticus and cisterna interpeduncularis around a soft tissue mass emerging from the intrasellar space intrasellar lesion becoming suprasellar (Fig. 3, *vide* Plate).

First operation—The patient was operated under hypothermia and hypotensive anaesthesia. A typical Dandy's approach was made on the left side and a huge tumour was detected lateral to the left optic nerve. The left optic nerve was completely atrophic and had to be severed to get a better approach of the tumour. The tumour was partly cystic and partly solid. The cyst contained dark black old blood. The postoperative recovery was uneventful.

Histologically the tumour was an eosinophil adenoma.

The patient was discharged on 10-8-59.

Follow up—The ophthalmoplegia receded completely within the course of two months of the operation. The hypaesthesia of the left half of the face recovered completely.

The patient was keeping well till about the first week of January, 1960, when one day he had an attack of severe headache and there was a recurrence of the left ophthalmoplegia with all its previous features. He was re-admitted into the hospital.

Second operation—An opening was made through the original exposure under hypothermia and a re-exploration of the tumour site was made. The tumour had again grown to its original size and was again removed in piecemeal. But the patient succumbed to the operation on the 4th post-operative day due to hyperpyrexia.

Histologically the tumour was found to be of the same character as before.

CASE 2 (CASE NO. 19)—T. K. G., male, aged 40, was admitted on 10-11-58 with complaints of progressive loss of vision 1 year, lack of libido, lemon yellow discolouration of the skin and falling off of hairs.

Neurologically there was bilateral loss of temporal visual fields (Fig. 4). Fundii showed: right eye—onset of primary optic atrophy; left eye—normal.

Roentgenologically there was bullous enlargement of the sella turcica with widening of the interclinoid distance—intrasellar tumour becoming extrasellar (Fig. 5, *vide* Plate).

On 12-11-58, the patient complained of sudden onset of severe headache with nausea and vomiting. On examination he was found to be in an acute stage of shock

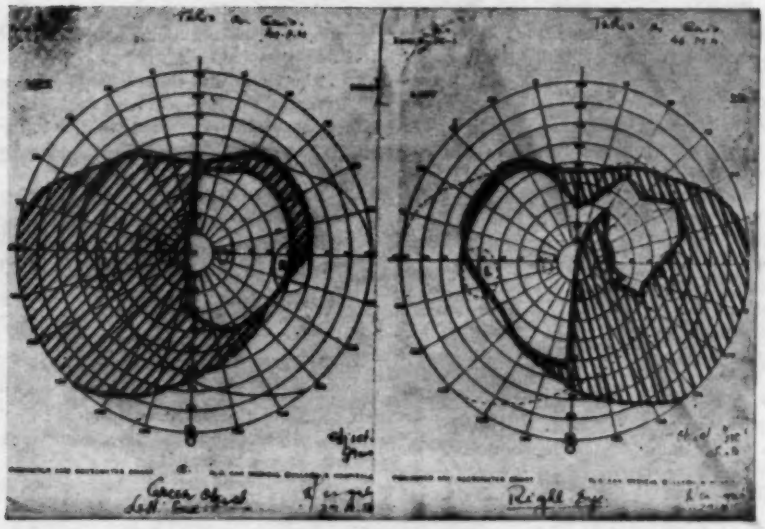

FIG. 4—PERIMETRIC CHART SHOWING BITEMPORAL DEFECTS IN THE FIELDS OF VISION.

with pulse 130 per minute—feeble, and respiration 28 per minute—regular. His blood pressure was 100/60 mm. Hg. He was treated with analeptics and intravenous transfusions. A lumber puncture was made. The cerebrospinal fluid was found intimately mixed with fresh blood (? Aneurysmal rupture or rupture of a cystic pituitary tumour).

Operation—Seven days after recovery from the above acute episode the patient was operated under general anaesthesia. A right-sided Dandy's approach was made. Strangely enough no pituitary tumour could be located. But on exploring posterior to the chiasma a hole was visible on the diaphragma sellae, through which no anatomical structures were seen to pass. The margins of the hole were ragged. The diaphragma sellae was unusually lax. On exploring through this aperture with a blunt instrument, a deep cavity with bony floor and sides could be negotiated which was obviously the empty sella turcica. A curette was passed through this hole but only a few strings of yellow gelatinous tissue could be brought out.

Comment—This case was unique. It presented with typical manifestations of chromophobe adenoma but on exploring a negative result was obtained. The question still remains to be answered whether the previously described sudden crisis of the case was coincident with a spontaneous rupture of a cystic pituitary tumour.

Histologically the gelatinous material was an amorphous mass of tissue taking light eosin stain.

Postoperative recovery was completely uneventful. On the third postoperative day a lumbar puncture was made and the same type of gelatinous material came out on suction. The staining characters of this mass was also of the previous nature. The recovery of the field defects were complete and the patient improved as regards his sexual complaints. Recently in another case, a pituitary tumour with a cyst containing glairy mucoid fluid was encountered. The mucin was secretory in type.

The patient was discharged on 16-12-58.

CASE 3 (CASE NO. 22)—S. P., male, aged 30 was admitted on 2-10-60 with complaints of headache, progressive dimness of vision, progressive enlargement of acral parts for the past 4 years and progressive somnolence for one year.

The patient stated that he had been suffering from left-sided loss of vision and progressive enlargement of his extremities for the past 4 years.

He was getting somnolent for the past one year and since that time he was feeling difficulty in moving his left eyeball and the upper eyelid.

On examination the patient showed obvious features of acromegaly and left-sided ophthalmoplegia (Fig. 6).

FIG. 6—A PHOTOGRAPH OF THE PATIENT SHOWING ACROMEGATIC FEATURES WITH LEFT-SIDED OPHTHALMOPLEGIA (*right*), AND A COMPARATIVE PHOTOGRAPH TAKEN 4 YEARS AGO (*left*).

Neurologically there were: lack of orientation and memory and below-normal intelligence, left total ophthalmoplegia and onset of primary optic atrophy in the left eye.

Roentgenologically there was bullous enlargement of the sella turcica (Fig. 7, *vide* Plate). No angiographic changes were present.

On the forenoon of 10-10-60 the condition of the patient suddenly turned worse. He became deeply comatose, and had three attacks of vomiting. Supportive measures were adopted and in the evening the patient's condition improved.

On 11-10-60 the patient became comatose again at 9 P.M. and on dehydration therapy his condition slightly improved. A lumbar puncture was made. The C.S. fluid was under moderate pressure and was found intimately mixed with blood.

On 12-10-60 the patient became irritable and violent, and had to be quietened with the help of strong sedatives. At 6 P.M. on the same day the general condition of the patient further deteriorated and he was put under intravenous hydrocortisone therapy. He gradually improved since and by 16-10-60 completely recovered from this crisis.

It was strange to observe that with this crisis the left-sided ophthalmoplegia receded and the patient was seeing better through his left eye.

As the patient's condition improved it was decided to postpone operation and keep him under further observation. He was, however, discharged on 15-11-60.

CASE 4 (CASE NO. 2)—B. M., male, aged 45, was admitted on 18-10-59. The patient complained that he was having progressive dimness of vision, more specially of the left side. Associated with this he had falling off of hairs, lack of libido, and lemon yellow colour of the skin.

Neurologically the right eye showed temporal field defect with signs of primary optic atrophy. The left eye showed vision almost nil, with gross contraction of the temporal field and associated pallor of the optic disc (Fig. 8).

Roentgenologically there were (1) Bullous enlargement of the sella, and (2) angiogram showed superolateral deviation of the left anterior cerebral artery by a suprasellar space-occupying lesion (Fig. 9, *vide* Plate).

Operation—A typical Dandy's approach through the left side was made and the tumour was removed piecemeal.

Histologically the tumour was a chromophobe adenoma.

Follow up—There was almost complete recovery of the field defects and moderate improvement of vision in the left eye (about 6/12).

The patient was discharged on 29-11-59.

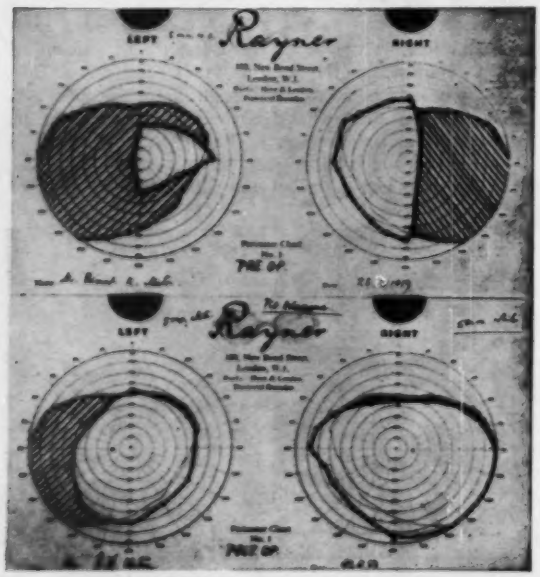

FIG. 8—PERIMETRIC CHART SHOWING PREOPERATIVE DEFECTS IN THE TEMPORAL FIELD (*top*) AND POSTOPERATIVE RECOVERY OF THE FIELD DEFECT (*bottom*).

DISCUSSION

We had altogether 28 cases of pituitary adenomas out of a total of 155 verified brain tumour cases (18·06 per cent) during the last 6 years. The age variation in our series ranged between 11 and 57 years, of which 18 were males (64·2 per cent) and 10 were females (35·7 per cent). Of those, 20 cases were operated upon (71·4 per cent) and the rest were selected for radiation therapy. Of the 20 operated cases, 18 were histologically verified. Histologically there were 10 chromophobe adenomas (55·5 per cent), six eosinophil adenomas (33·3 per cent), two of which were cystic and the last two cases were of mixed adenomatous type (11·1 per cent). Five cases (27·7 per cent) of the operated series died postoperatively. Two of these cases had manifestation of increased intracranial tension prior to the operation.

All the cases were roentgenologically investigated. Of the seven cases angiographically examined, 5 showed definite angiographic changes. Two cases were ventriculographically examined, and one showed characteristic changes.

In this series Cases 17, 19, 20 and 22 have been described in detail because of their individual peculiarities. Case 17 was the youngest in the series and he was a growing giant (5 ft. 9 in.). It was rather unfortunate that he had a rapid recurrence of symptoms within one year after almost complete removal of the tumour. It could not be cytologically ascertained whether the cells of this tumour were of a fast-growing type or not. Case 16 was a Loraine-Levi type of dwarf having

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a chromophobe adenoma. Cases 19 and 22 had spontaneous recovery of the non-endocrinologic symptomatology. List *et al* (*loc. cit*) observed that pituitary adenomas occasionally tend to undergo vascular changes such as massive haemorrhage or infarction with acute onset of grave intracranial signs such as subarachnoid or intracerebral haemorrhage. Although these two cases developed sudden grave intracranial signs and also had subarachnoid haemorrhages, yet luckily for us both of them recovered clinically. One of them was operated upon and definite evidences of spontaneous rupture of possibly a cystic pituitary tumour were present.

Summary

Twenty-eight cases of pituitary adenomas are presented of which 20 were operated upon and 18 were histologically verified. Two cases had spontaneous recovery of non-endocrinologic symptoms after onset of grave intracranial signs.

Acknowledgment

My sincere thanks are extended to Maj. Gen. A. K. Gupta, for his kind permission to publish the hospital records and to my colleagues, Drs. T. K. Ghosh and R. N. Chatterjee, who helped me with valuable suggestions and some materials.

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LABORATORY AID IN THE DIAGNOSIS OF TRICHOMONAL VAGINITIS

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Leucorrhoea is a fairly common complaint and because of the discomfort and the emotional stress associated with it the subject has been studied time and again.

Leucorrhoea may be due to diverse infections which may be either fungal, bacterial or protozoal. *Trichomonas vaginalis* is the most common cause of leucorrhoea during the menstrual age, and is generally not encountered in young girls and in women after the climacteric. As most cases of leucorrhoea fall in this group, particular attention was paid to the *Trichomonas vaginalis*. The incidence of trichomonal vaginitis as recorded by various workers varies a great deal, and that among patients attending outpatients' departments of gynaecological clinics has been reported to be from 20 to 60 per cent or over.

There has been no definite demonstration that the parasite produces any characteristic lesion. Presence of this organism in the vaginal discharge and its association with ulcerative, granulomatous and inflammatory types of lesion have been abundantly proved. Whether the parasite causes the lesion or it aggravates the already existing inflammatory condition of the vaginal tract has not been finally settled.

Aim and Object

The study of *Trichomonas vaginalis* in the laboratory does not appear to have attracted much attention. In a few hospital laboratories in this country an attempt has been made to grow the trichomonas, as a routine. The usual practice is merely to examine a fresh specimen of urine or vaginal smear microscopically. The reason perhaps is that attempts to grow the trichomonas *in vitro* have not been very successful. The present work was therefore undertaken with a view to try out various media and methods and introduce an easy, practical and reliable method of growing *Trichomonas vaginalis*. It was also our aim to ascertain the percentage of cases of trichomonal vaginitis which could be missed even after careful microscopic examination of the urine or of the vaginal swabs. Attempts at growing the causative organisms as a routine in all suspected cases could con-

siderably improve the chances of a correct diagnosis and rational treatment.

Material and Methods

Material for this investigation was collected from 100 cases of leucorrhoea at the gynaecological outpatient's department of the J. J. Group of Hospitals.

Patients were subjected to a thorough general and pelvic examination, and all other abnormalities like anaemia, fibroids, fistulae, tumours of the genital tract, leukoplakia, erosion of the cervix, etc., were excluded. Only those cases of leucorrhoea that showed vaginitis were proceeded with.

The discharge from the posterior fornix of the vagina was collected with a pipette after putting in a dry speculum and without using any lubricant or disinfectant. No vaginal douche had previously been given and no antiseptic used by the patient. The exudate was suspended in Ringer's solution and a wet preparation was examined microscopically for micro-organisms. The material was then cultured simultaneously for the trichomonads and the fungi, the other commonest organism found in leucorrhoea. Specimens were collected at repeated intervals and processed ; and no finding was accepted after a single examination. On an average nine to twelve specimens were collected from each patient and examined. The commonest medium for culture employed for the *Trichomonas vaginalis* by workers in this field is the simplified trypticase serum advocated by Kupferberg and Sprince (1948). But trypticase is not available in India. Therefore, the recommendations of Wilkinson and Williams (1958) who advocated the use of tryptone as a substitute for trypticase, were tried. For culturing trichomonads this modified S. T. S. medium and various other media, notable among them being the liquid Vf. bouillon medium suggested by Magara *et al* (1953), were employed. The Vf. bouillon medium was slightly modified before use. It contained beef and beef liver digested in hydrochloric acid and pepsin to which glucose solution was added to make a concentration of 0·5 per cent. The medium was bottled in 5 ml. capacity MaCartney bottle and was steam-sterilised for half an hour. This medium could be stored in the refrigerator and used for over a month. Before use, bacteria-free human serum was added to the medium to the extent of 10 per cent. Penicillin and streptomycin, in the strengths of 100,000 units/ml. and 20 mg./ml. respectively, were used for inhibiting the growth of bacteria and thus preserving this protozoon.

After inoculation the bottles were incubated at 37°C, and at intervals of 2 to 4 days transplanted, for obtaining pure growths. This was usually obtained after about the 3rd transplant with the exception of yeast cells which however persisted in some of the cultures. Mycostatin could have been added to the medium in small concentrations with advantage. Similar procedure was adopted for the use of S. T. S. medium.

For culturing candida the material was inoculated on Sabouraud's dextrose or maltose agar to which antibiotics, viz., penicillin and streptomycin were added. For species identification other media such Sabouraud's dextrose broth, rice-infusion agar and beef broth tubes with 1 per cent sugar and brom-thymol-blue as the indicator were used. Dextrose, maltose, saccharose and lactose were the sugars employed.

Results

Results of 100 cases are presented in Table 1. Forty-five cases showed presence of the *Candida albicans*, 36 showed *Trichomonas vaginalis* and in 19 cases the Trichomonas and the Candida were absent. As against 36 positive cultures of the trichomonas obtained in Vf. bouillon medium only 11 were positive in modified S.T.S. medium.

Table 1—Showing Result of Culture

Total No. of cases examined	100
No. positive for *Candida albicans* ...	45
No. positive for *Trichomonas vaginalis* ...	36
No. of cases of unknown aetiology ...	19

On 7 occasions, on repeated direct microscopic examinations of the smear no *Trichomonas vaginalis* was observed. In these cases positive cultures were obtained. They were obtained only in Vf. bouillon medium, the inoculated S.T.S. medium being consistently negative.

After treatment, when cases of trichomonal vaginitis on more than one microscopic examination failed to show the presence of organisms, the vaginal discharges were collected and the media inoculated. In 29 cases the *Trichomonas vaginalis* was grown again *in vitro*. In all these cases, the growth was obtained on Vf. bouillon medium only.

Discussion

The diagnosis of trichomonal vaginitis on clinical grounds is at best a guess work. If cultural methods are not available one cannot rule out the diagnosis of trichomonal vaginitis unless

repeated microscopic examinations of the urine and the vaginal smears are done and the materials from the cervix, and the urethra are also examined. And even then there will be cases which will be negative on repeated microscopic examinations and yet yield a growth on culture media. Besides, the examinations by culture proved in this series to be the only reliable method of assessing the nature of cure the patient obtained. Cultures were positive even after the patient was declared clinically cured. Patients who showed negative cultures yielded growth of similar organisms after the lapse of 2 to 3 weeks of stoppage of treatment. Whether this phenomenon was a relapse or reinfection forms by itself another important problem. It becomes imperative that the male partner should also be included in tracing the source of infection. Cultures thus form an important and beneficial procedure in all the investigations of the incidence, epidemiology and transmission of the infection and the drug efficacy trials conducted on cases of leucorrhoea in gynaecology and obstetric practice.

From the data presented it will be seen that the majority (81 per cent) of the cases of leucorrhoea attending the gynaecology clinic, were either due to monilia or the trichomonads. This is not surprising since almost all authors agree on this point.

The cases of unknown aetiology may possibly vary from gonococcal infection to a purely non-infective disorder. In some cases *Entamoeba histolytica* and *Hemophilus vaginalis* have been reported as causative agents. Further investigations therefore for determining the aetiology of the unsolved cases will have to be done.

For the growth of the trichomonads *in vitro*, attention was focussed on two media, viz., Vf. bouillon medium and S.T.S. medium substituting trypticase with tryptone. The former medium gave decidely better results. The exudates which were positive for the trichomonads on direct microscopy, always yielded growth on Vf. bouillon medium. On seven occasions, positive growth *in vitro* was the only indication of the patient suffering from trichomonad infection. Till trypticase is available in India, it is suggested that Vf. bouillon medium should be used in the laboratory for the growth of the *Trichomonas vaginalis*.

Summary

100 cases of leucorrhoea with vaginitis as the only clinical finding have been investigated in the laboratory with a view to identify and isolate the common causative agents. 81 per cent of these cases were due to either *Trichomonas vaginalis* or *Candida albicans*.

Vf. bouillon medium has undoubtedly aided culturing of trichomonads. The medium is easy to prepare; it is not time-consuming and is economical. It gives better results than those obtained from using the modified S.T.S. medium.

Acknowledgment

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A LEFT-SIDED APPROACH TO THE BILIARY TRACT

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The traditional surgical approach to the biliary tract has been with the surgeon standing on the right side of the patient for the obvious reason that the structures comprising it are situated in the right half of the abdomen. A variety of incisions have been suggested from time to time for exposing these structures—vertical, oblique, transverse or composite—and the relative merits and demerits have been debated at length. It is only in comparatively recent years however that the surgeon's operating position in relation to the patient has been thought worthy of discussion and some of the advantages of standing on the left side for part or whole of the operation been pointed out. Our own experience of performing all operations on the biliary tract from the left

side throughout has been most gratifying and suggests that greater recognition of such advantages is necessary.

Prior to 1957, both of us, both right-handed surgeons, had operated upon the biliary tract from the right side. After the abdomen had been opened, usually with a right paramedian incision, and the usual exploration carried out, the structures of the biliary tract would be exposed. An assistant standing opposite would retract the stomach and duodenum to the left and the intestines downwards, while the surgeon's left hand would retract the liver and parieties upwards and hold instruments as required ; in the more difficult cases, a second assistant would stand on the surgeon's left and take over the retraction of the liver and parieties. The more important manoeuvres would be done with the right hand alone, with the wrist in flexion most of the time. Whenever a clear view of the ducts was not obtained by this method in a case demanding cholecystectomy, this had to be done by starting from the fundus.

Then, at about the same time but unknown to one another, both of us began to stand on the left side throughout for all operations on the biliary tract ; one of us impelled to do so by an assistant who had remarked that he was getting a much better view of the operating field, and the other stimulated to test out the truth of a paper by Haxton and McVerry (1956). Since then the left-sided approach has been utilised on about 60 occasions by one of us and on 55 occasions by the other and the change-over has been well worthwhile.

Technique

General anaesthesia with an endotracheal tube and the usual relaxants is used in all cases.

The abdomen is opened either with the right paramedian incision retracting laterally or splitting the rectus muscle, or with the upper midline incision, which is prolonged as a right paramedian below the umbilicus if required for appendicectomy. The performance of a right paramedian incision from the left side is not attended with any difficulty, but the midline is both easier and quicker, the subsequent exposure of the upper abdomen excellent and no significant differences have been observed in the healing of the two incisions.

The abdomen being opened, a thorough exploration is carried out ; the introduction of the right hand between the upper surface of the liver and the diaphragm allows the latter to be displaced down and to the left. A Morris or Deaver retractor is placed on the quadrate lobe of the liver and held in the left hand of the assistant opposite in order to rotate the liver and bring the subhepatic structures in view ; these are further exposed by the lifting up of the right edge of the peritoneum and linea alba or rectus sheath by a strong haemostat held in the assistant's right hand. The stomach and intestines are now displaced down and to the left and three packs are inserted, one to push the colon and jejunal loops down, another to push the stomach and duodenum to the left and the third in the region of the foramen of Winslow. The first two packs are maintained in position by the surgeon's left hand placed in the abdomen as shown in Fig. 1, comfortably, with the wrist extended. The

Fig. 1—Showing Exposure of the Biliary Tract with the Surgeon Standing on the Left of the Patient.

dorsum of the hand, wrist and lower forearm act as a laparotomy pad, and thus retractors can be dispensed with. The index and middle fingers of this hand are insinuated behind the common duct and its accompanying vessels, while the thumb lies in front of these, and the ring and little fingers can be used to displace the pyloroduodenal region further down. It is now possible to carry out an accurate palpation of the entire biliary system including the head of the pancreas between the thumb and first two fingers of the

left hand, and the line of treatment can be planned.

When cholecystectomy has been decided upon, the gall-bladder is suitably grasped, after aspiration if necessary, by an instrument or instruments held in the assistant's right hand, which has by now released the haemostat on the parietal peritoneum. The structures at the neck of the gall-bladder are now clearly visible to the surgeon, and all anatomical and pathological abnormalities become apparent. The dissection of the cystic artery and duct is now begun ; this is greatly facilitated by guiding the manoeuvres of the right hand by the fingers of the left. In favourable cases, the structures can be hooked over the left index finger and dealt with with the greatest of ease. In the vast majority of cases, it has not been necessary to abandon this dissection in favour of dissection from the fundus. After the artery and duct are isolated, ligatures are passed round them and tied and the structures then divided. The gall-bladder is then stripped off the liver bed, if necessary after some saline has been injected subperitoneally. The liver bed is in many cases left alone ; in others it is sutured by passing the sutures on a round-bodied needle held in a long needleholder from left to right under direct vision. Accidental haemorrhage from branches of the cystic artery that are missed or from a slipped ligature, one of the most important causes of duct injury, can be dealt with most effectively and speedily by compressing the hepatic artery between the fingers and thumb of the left hand and applying a haemostat with the right.

Choledochotomy when indicated has invariably been done prior to operations on the gall-bladder. The fingers of the left hand behind the common duct help to hook it up and facilitate the insertion of stay sutures or fine forceps or allow the duct to be opened directly over a calculus milked up to the site of incision. After the duct is opened the fingers of the left hand help actively in exploring the ducts, removing calculi, washing out debris, dilating the ampulla of Vater and inserting a tube. The lower reaches of the duct system can be explored with the greatest of ease, and the retroduodenal and transduodenal approaches carried out if necessary most comfortably ; the hands are somewhat awkwardly placed for exploring the upper reaches of the ducts, but less awkwardly than the hands of a surgeon exploring the lower reaches from the right side.

Other operations that have been performed by one or the other of us from the left side include :

1. Cholecystostomy,
2. Cholecysto-enterostomy and cholecysto-gastrostomy for inoperable carcinoma of the pancreas,
3. Cholecystoduodenostomy following a difficult partial gastrectomy,
4. Repair of the duodenum in a case of cholecystoduodenal fistula, and
5. Repair of an injury to the bile duct.

Drainage is provided after almost all operations. A stab incision is made in the right flank from within out by the surgeon ; the assistant follows the receding knife with a blunt haemostat, which enters the abdomen, grasps one end of the drainage sheet or tube and draws it out. The abdomen is then closed in layers from below up.

Discussion

While in most descriptions of operations on the biliary tract it is assumed that the surgeon stands on the right side of the patient, a few writers have pointed out that certain specific steps are better performed from the left side. Thus it has been stated that the initial palpation of the ducts (Grey Turner and Rogers, 1955 ; Maes and Weiss, 1951) and even of the liver and gall-bladder (Oberhelman, 1957) is easier from the left. The last author after stressing the advantages of the relaxed attitude of the left hand during palpation and its role as a retractor, advises that the surgeon return to the right side to carry out the actual operative procedure. The control of haemorrhage from the cystic artery has also been thought more satisfactory from the left (Allen, 1945), but a change of side during this grave emergency is likely to waste both time and blood. The better visibility, and ease of dissecting and ligating the cystic artery and duct and of exploring the common duct from the left side have been pointed out in an editorial article by Gerwig (1951) which suggested that the surgeon should move to the left after making the right paramedian incision from the right, and return to the right side to suture the liver bed and close the abdomen. The ease of dissecting out the ducts and controlling blood vessels from the left side has also been noted by Baronsfsky (1951), Garlock (1951) and Stirling (1955) but the latter found cholecystectomy to be rather awkward from the left side.

Only two papers supporting a left-sided stance throughout all operations on the biliary tract have been encountered by us. Pettinari (1952) of Padua has used this method systematically with a midline incision since 1934 and has taught it to his juniors over several years. His introduction of liver bed sutures from right to

left after moving towards the head end of the patient and having a retractor at the left lower quadrant, appears to us to be unnecessarily complicated. Haxton and McVerry (1956) have operated through a midline incision from the left side since 1952 ; while in agreement with the fundamentals of their technique we cannot appreciate the advantages of straight artery forceps for the cystic artery and duct or the authors' aversion to aspiration and to instruments or sutures to hold the gall-bladder or common duct.

SUMMARY

The advantages gained by adopting a left-sided stance throughout all operations upon the biliary tract over a period of four years by two of us have been recorded, and the technique followed by us described in some detail.

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ATTITUDE TOWARDS FAMILY PLANNING

A Survey in Jaipur City

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Planned parenthood or family planning is a national problem of fundamental importance. At present, the development plans in economic and social fields are jeopardised by our chronic food problem, low standard of living, relatively high birth and death rates, and high morbidity. No development policy can be successful if the increase in the standard of living is counter-balanced by increase in the population. The Government of India, the State Governments and most leaders of public opinion believe that the solution of our population problem lies in family planning. The Planning Commission has included family planning programme in our five-year plans.

The family planning programme is not merely the establishment of clinics for imparting advice and instructions. But the problem is largely a matter of attitudes and motivations of the people who are most intimately involved in such programme. Unfortunately very little has been done in this respect, for roughly twenty-five family planning attitude surveys, covering a total population of 32,000 females and 7,500 males have so far been conducted in India. Most of these surveys have been conducted to find out the attitude of the rural women, and only few have been conducted to find out the attitude of rural males (Agarwal, 1960).

Further, most of these surveys have been conducted in a few selected areas like Calcutta, Delhi, Poona, Madras, Mysore and Lucknow. It appears that not much work has been done to find out the attitudes on this subject in other areas.

As man is the dominant partner in the family, and the woman cannot take any positive step in favour of family planning without the consent of the husband, an attitude survey of the male towards family planning is all the more important. With this view in mind, the present study was undertaken for studying the attitudes of males towards family planning in the city of Jaipur.

Jaipur is the capital of Rajasthan, with a population of nearly half a million. But it has many of the sociological characteristics of a small town. An overwhelming majority of the population is Hindu.

For this study five areas were selected in the city with lower and lower middle class inhabitants. In these areas every third house was visited. Males between 16 and 50 years were interviewed and requested to answer a set of twenty-two questions, which included enquiries regarding age, educational status, number of living children, attitude towards family planning, knowledge of contraceptives, desired number of children an ideal family should have, sterilisation, etc. A pilot study was also made and on the basis of observations made in that study a few changes were made in the questionnaire. Interviews were conducted by a group of ten experienced volunteers.

OBSERVATIONS AND COMMENTS

On the whole 350 males were interviewed. As 36 questionnaire forms were returned incomplete,

the following analysis is based on data from the remaining 314 only.

Age—Persons interviewed were married males between 16 and 50 years. Of these 70 were between 16 and 25 years, 148 between 26 and 35, 75 between 36 and 45, and 21 between 46 and 50 (Table 1).

Educational status—Of 314 subjects included in this study there were 44 graduates, 30 undergraduates, 84 matriculates, 117 non-matriculates and 39 illiterates (Table 2).

Social status—About 66 per cent of the subjects belonged to the lower middle class. This included teachers, clerks, students, carpenters, marble workers, and business men. The remaining 34 per cent came from the lower income group and included rikshaw-pullers, peons, drivers and labourers.

TABLE 1—SHOWING EDUCATIONAL STATUS IN DIFFERENT AGE GROUPS

Age (years)	Number responding to questionnaire	Per cent of total	Education Standard				
			Illiterate	Non-Matric	Matric	Under-graduate	Graduate
16-20 ...	13	4·1	2	8	3	—	—
21-25 ...	57	18·1	7	14	20	7	9
26-30 ...	80	25·5	9	17	24	13	17
31-35 ...	68	21·7	6	30	14	6	12
36-40 ...	51	16·2	8	22	17	1	3
41-45 ...	24	7·7	4	13	4	1	2
46-50 ...	21	6·7	3	13	2	2	1
Total ...	314	100·0	39	117	84	30	44
Percentage	100·0	—	12·4	37·3	26·7	9·6	14·0

TABLE 2—SHOWING THE NUMBER OF LIVING CHILDREN PRESENT BY EDUCATION STANDARDS OF MALE PARENTS

Education standard	No. responding to questionnaire	Number of living children present							Average per family
		None	One	Two	Three	Four	Five	Six and above	
Illiterate	39	4	8	3	1	6	8	9	3·7
Non-matric	117	18	14	15	18	12	16	24	3·1
Matric	84	14	18	14	10	16	4	8	2·8
Undergraduate ...	30	2	5	10	6	2	1	4	2·6
Graduate	44	7	5	12	4	6	7	3	2·8
Total ...	314	45	50	54	39	42	36	48	3·0
Percentage ...	100·0	14·3	15·9	17·2	12·4	13·4	11·5	15·3	

TABLE 3—SHOWING THE NUMBER OF LIVING CHILDREN PRESENT BY AGE GROUP OF MALE PARENTS

Age (years)	No. responding to questionnaire	Per cent of total	Number of living children							Average per family
			None	One	Two	Three	Four	Five	Six & above	
16-20 ...	13	4·1	10	2	1	—	—	—	—	0·3
21-25 ...	57	18 1	17	24	14	2	—	—	—	1·0
26-30 ...	80	25·5	10	17	24	8	11	10	—	2·3
31-35 ...	68	21·7	5	—	8	19	16	8	12	3·8
36-40 ...	51	16·2	1	4	3	6	11	10	16	4·6
41-45 ...	24	7·7	—	1	2	3	3	4	11	5·2
46-50 ...	21	6·7	2	2	2	1	1	4	9	4·6
Total ...	314	100·0	45	50	54	39	42	36	48	3·0
Pencentage	100·0	—	14·3	15·9	17·2	12·4	13·4	11·5	15 3	

TABLE 4—SHOWING NATURE OF ANSWERS RECEIVED FROM VARIOUS AGE GROUPS

Items	No. responding to questionnaire	Per cent of total	Age (in years)						
			16-20	21-25	26-30	31-35	36-40	41-45	46-50
NO. OF CHILDERN A FAMILY SHOULD HAVE									
Two children ...	28	8·9	1	8	8	2	5	2	2
Three ,, ...	88	28·0	2	28	26	12	14	5	1
Four ,, ...	137	43·6	5	19	37	36	22	10	8
Five ,, ...	36	11·5	3	1	3	15	6	4	4
Six ,, and above ...	5	1·6	—	—	1	—	2	1	1
Unspecified	20	6·4	2	1	5	3	2	2	5
SPACING DESIRED (IN YEARS)									
Two years	59	18·8	4	7	10	13	14	6	5
Three years	162	51·6	5	30	47	34	28	11	7
Four years	50	15·9	—	9	15	11	6	3	4
Five years	14	4·4	—	4	2	5	—	2	1
Six years and above ...	4	1·3	—	1	1	—	—	—	2
Unspecified	25	8·0	2	6	5	5	3	2	2
FAMILY PLANNING METHODS KNOWN									
Rubber condom ...	70	22·3	5	21	25	14	5	—	—
Others	38	12·1	—	4	10	14	5	4	1
None	206	65·6	8	32	45	40	41	20	20
SHOULD THE PUBILC BE TAUGHT FAMILY PLANNING METHODS?									
Yes	248	79·0	10	46	68	52	42	17	13
No	39	12·4	1	3	5	12	6	4	8
Unspecified	27	8·6	2	8	7	4	3	3	—
DESIRE TO LEARN FAMILY PLANNING METHODS THEMSELVES									
Yes	210	66·8	11	52	69	45	26	5	2
Individually	83	26·4	2	13	22	21	20	4	1
In groups	127	40·4	9	39	47	24	6	1	1
No	94	30·0	2	5	11	19	21	18	18
Operated cases ...	10	3·2	—	—	—	4	4	1	1
SHOULD WIVES LEARN FAMILY PLANNING METHOD?									
Yes	97	30·8	2	17	31	34	9	3	1
In clinic	45	14·3	2	6	9	21	5	2	—
At home	48	15·3	—	7	22	13	4	1	1
In neighbour's house ...	4	1·2	—	4	—	—	—	—	—
Operated cases ...	10	3·2	—	—	—	4	4	1	1
WOULD YOU LIKE PERMANENT STERILISATION?									
Yes	90	28·7	—	10	24	33	18	2	3
Husband	57	18·2	—	9	15	20	9	2	2
Wife	33	10·5	—	1	9	13	9	—	1
No	214	68·1	13	47	56	31	29	21	17
Operated cases ...	10	3·2	—	—	—	4	4	1	1
Total ...	314	100·0	13	57	80	68	51	24	21
Percentage ...	100·0	—	4·1	18·1	25·5	21·7	16·2	7·7	6·7

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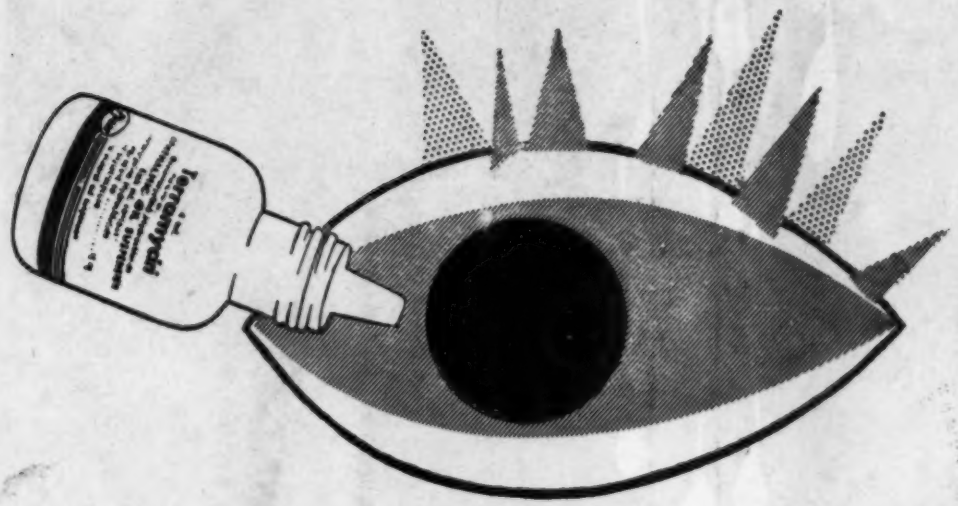

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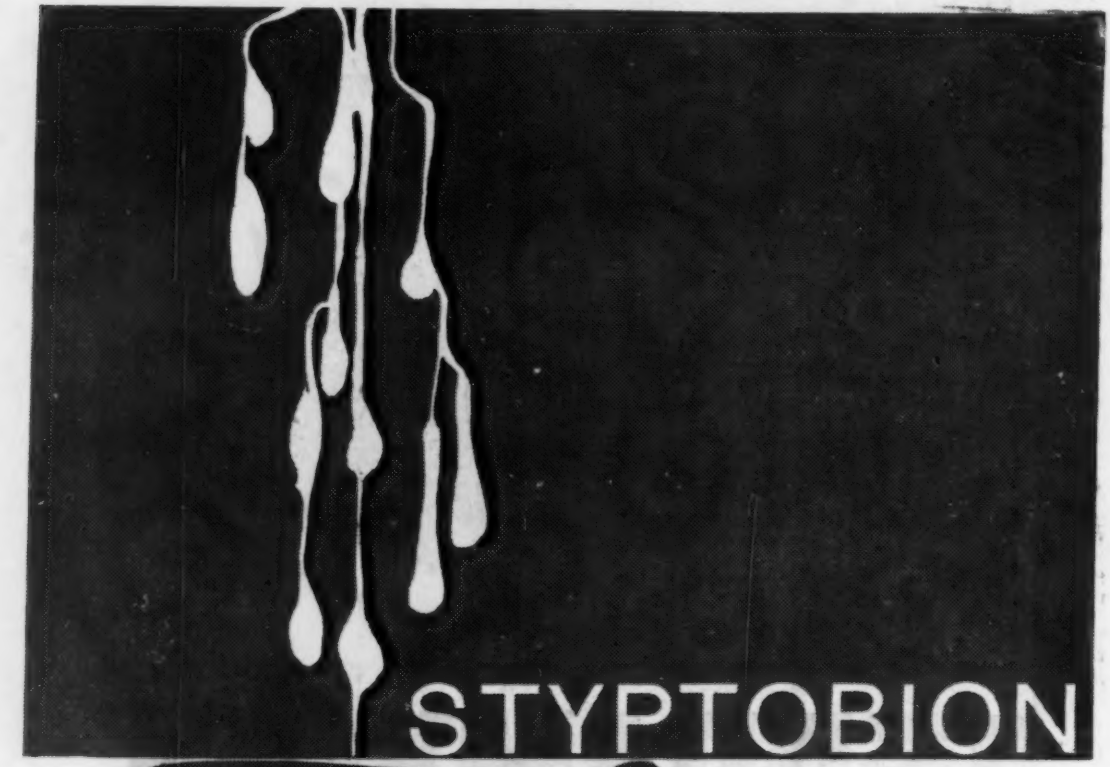

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TABLE 5—SHOWING NATURE OF ANSWERS RECEIVED FROM PERSONS OF DIFFERENT EDUCATIONAL STANDARD

	No. responding to questionnaire	Per cent of total	Educational Standard				
			Illiterate	Non-Matric	Matric	Under-graduate	Graduate
NUMBER OF CHILDREN A FAMILY SHOULD HAVE							
Two children ...	28	8·9	4	9	7	5	3
Three ,, ...	88	28·0	10	19	30	13	16
Four ,, ...	137	43·6	14	54	38	9	22
Five ,, ...	36	11·5	6	18	8	1	3
Six ,, and above ...	5	1·6	—	3	—	2	—
Unspecified ...	20	6·4	5	14	1	—	—
SPACING DESIRED (IN YEARS)							
Two years ...	59	18·8	10	22	19	6	2
Three ,, ...	162	51·9	22	55	38	17	30
Four ,, ...	50	15·9	1	23	12	4	10
Five ,, ...	14	4·4	—	3	9	1	1
Six ,, and above ...	4	1·3	—	—	3	—	1
Unspecified ...	25	8·0	6	14	3	2	1
FAMILY PLANNING METHODS KNOWN							
Rubber condom ...	70	22·3	5	12	15	12	26
Others	38	12·1	1	9	20	2	6
None	206	65·6	33	96	49	16	12
SHOULD THE PUBLIC BE TAUGHT FAMILY PLANNING METHODS?							
Yes	248	79·0	26	77	79	27	39
No	39	12·4	3	25	3	3	5
Unspecified	27	8·6	10	15	2	—	—
DESIRE TO LEARN FAMILY PLANNING METHODS THEMSELVES							
Yes	210	66·8	26	70	57	26	31
Individually ...	83	26·4	11	37	23	6	6
In groups	127	40·4	15	33	34	20	25
No	94	30·0	13	46	22	4	9
Operated	10	3·2	—	1	5	—	4
SHOULD WIVES LEARN FAMILY PLANNING METHODS?							
Yes	97	30·8	5	26	27	13	26
In clinic	45	14·3	5	12	13	1	14
At home	48	15·3	—	13	13	10	12
In neighbour's house ...	4	1·2	—	1	1	2	—
No	207	66·0	34	90	52	17	14
Operated	10	3·2	—	1	5	—	4
WOULD YOU LIKE PERMANENT STERILISATION?							
Yes	90	28·7	12	21	27	14	16
Husband	57	18·2	7	12	18	6	14
Wife	33	10·5	5	9	9	8	2
No	214	68·1	27	95	52	16	24
Operated	10	3·2	—	1	6	—	—
Total ...	314	100·0	39	117	84	30	44
Percentage ...	100·0	—	12·4	37·3	26·7	9·6	14·0

Number of living children—The average number of living children present was calculated by dividing the total number of living children present at the time of interview by the total number of males interviewed. According to this, the average number of living children per male interviewed came to 3·0. But this also varied according to age and educational standard of the persons. It was found that for the graduates the average number of living children present was 2·8, for undergraduates 2·6, for matriculates 2·8, for non-matrics 3·1, and for the illiterates 3·7 (Table 2). Thus the number of living children present per family was closely related to the educational status of the males. Similar correlation was also observed between the number of living children present and the age of persons interviewed. The average number of living children present per male interviewed by age groups is shown in Table 3. This varied from 0·3 per male in the age group of 16-20 to 5·2 in the age group of 41-45.

Desired number of living children—According to the opinions expressed by the males interviewed, the number of children an ideal family should have varied from one to six ; modal value being 4, i.e., a great majority of males 43·7 per cent) favoured having 4 children for an ideal family. About 60 per cent preferred having three to four children and 85 per cent for having four or less (Tables 4 and 5). This opinion also varied according to age, educational standard of persons interviewed and the number of living children present. Of males between 16-25, 55·7 per cent preferred having 2 or 3 children. But as the age increased the number of children desired went up to 3-4 and even more than 4. In the age group 26-35 about 74·5 per cent favoured having 3-4 children, while between 36 and 50 years about 60·4 per cent gave their preference for 4 or more children.

It is worth mentioning that this desire in the elderly group for 3-4 children could be explained by the fact that most of them already had 3 or more children. On going through Table 6, showing the number of children present and number of children desired, it is found that 70 per cent of males with desire for 4 or more children had 4 or more.

It is also interesting to note that while only 13·1 per cent of subjects expressed the desire for more than 4 children, 26·7 per cent already had more than 4. This points to the fact that there was a difference in the optimum and present size of the family. Similar facts have also been reported by Singh (1955). Chandrasekaran (1955) and Mathen (1954). From these reports and the findings of the present study it can be stated that there is considerable evidence to support the view that the knowledge of family planning methods is one of the felt needs of the community.

A close correlation was found between the standard of education and the opinion expressed as to the number of living children an ideal family should have. While only 71·5 per cent of illiterates and 70·1 per cent of non-matriculates were in favour of 4 or less number of children, about 82·0 per cent of matriculates, 90·0 per cent of undergraduates, and 95·5 per cent of graduates preferred 4 or less children for an ideal family.

Desired spacing—It is interesting to note that the desired spacing between two pregnancies varied very closely according to educational standards of the people. Among graduates only 4·5 per cent preferred to have average spacing of 2 years, while in the undergraduates, matriculates, non-matriculates and illiterates it was desired by

TABLE 6—SHOWING NUMBER OF LIVING CHILDREN DESIRED AND THE NUMBER OF LIVING CHILDREN PRESENT

No. of living children present	Responding to questionnaire	Number of living children desired					
		2	3	4	5	6	Unspecified
0	45	3	10	18	7	0	7
1	50	7	26	13	1	1	2
2	54	13	16	24	0	0	1
3	39	2	15	17	4	0	1
4	42	2	6	32	2	0	0
5	36	1	11	14	8	0	2
6	30	—	3	12	10	2	3
7	9	—	—	3	3	2	1
8	6	—	1	4	—	—	1
9	3	—	—	—	1	—	2
Total	314	28	88	137	36	5	20
Percentage	100·0	8·9	28·0	43·6	11·5	1·6	6·4

16·6, 22·6, 18·8 and 25·6 per cent respectively. Majority of married males (51·6 per cent) preferred a spacing of 3 years. Spacing of more than 4 years was completely disfavoured by illiterates and very little favoured in other groups (Table 4).

According to age groups there was not much difference in the desired spacing between two pregnancies. 65·7 per cent in the age group 16-25, 73·4 per cent in 36-40 and 67·4 per cent in 41-50 years favoured 2-3 years of spacing (Table 5).

Teaching of family planning methods to the public—The percentage of persons who favoured teaching of family planning methods to the public varied from 65·8 in non-matriculates to 94·0 in matriculates. In undergraduates and graduates this was favoured by 90·0 and 88·6 per cent respectively. On the whole this idea was favoured by a majority of people interviewed (91·4 per cent). According to age groups it was favoured by 84·9 per cent of subjects up to the age of 40 and by 71·4 per cent of those above 40 years.

Learning of family planning methods—Tables 4 and 5 show the number and percentage of persons in favour of learning family planning methods themselves, according to their educational standards, age groups, and methods of approach. Out of 304 individuals who answered the questionnaire, 94 (34·0 per cent) did not favour the idea at all. According to age groups learning was favoured by 132 out of 150 subjects up to 30 years, while in the age group 31-40 it was favoured by 71 out of 119. In the age group 41-50 only 7 out of 45 agreed to the suggestion of learning family planning methods. Amongst the graduates and undergraduates 77·0 per cent favoured the idea while amongst the remaining groups this was preferred by only 63·8 per cent.

Of those who favoured this idea (210), 60·5 per cent favoured the idea of such teaching in groups, while 29·5 per cent preferred an individual approach. It was mostly in the graduates, undergraduates, and matriculates that males favoured the idea of group approach. According to age groups this was favoured by 68·7 per cent of those between 16 and 25 years, by 48·0 per cent between 26 and 35, and by only 8·3 per cent above 35 years.

Teaching of family planning methods to female partners—In spite of the fact that an overwhelming majority of people favoured the idea of family limitation and learning of family planning methods, the males were generally reluctant to the idea of teaching these methods to their female partners (only 30·8 per cent favoured it). This again was closely related to the educational standard of males interviewed. While 59·1 per cent of graduates favoured this idea, only 43·3 per cent of undergraduates, 32·2 per cent of matriculates, 22·2 per cent of non-matriculates and 12·8 per cent of illiterates showed positive interest in any such teaching (Table 6).

It is interesting to note that 27·1 per cent of the subjects up to the age of 25 years favoured the idea of their wives learning family planning methods, while in the age group of 26 to 35 it was 43·9 per cent and in the age group of 36 to 50 it was 13·5 per cent only. This shows that the elderly and young males were not in favour of their wives learning such methods. This could be due to the fact that either they knew one or more of such methods themselves or they were not in favour of practising any of the family limitation methods.

Among people who favoured such teaching to their wives 37·0 per cent males up to the age of 30 years, 61·8 per cent between 31 and 35 and 53·8 per cent of those above 35 years preferred hospital and clinic as the place of such teachings, while the remaining considered the home as the ideal place.

Present knowledge of family planning methods—Of 314 people interviewed it was found that a great majority of them (65·6 per cent) had no knowledge of family planning methods. According to educational standards, these methods were more commonly known to matriculates, undergraduates and graduates (51·3 per cent). Among graduates 72·7 per cent knew of one or more such methods. According to age groups and number of living children this knowledge was more frequent in males between the age of 16 and 35 (42·6 per cent), and those with one to two or no issues.

Among the methods known, rubber condom was the most common one—about 65 per cent knew of this method only. While among graduates 59·1 per cent had knowledge of this method, among illiterates only 12·8 per cent knew about this. Other methods of family planning known to the males in this study varied from safe period, foam tablets, and diaphragm and jelly to coitus interruptus.

Permanent sterilisation method—Permanent sterilisation as a method of family limitation was favoured by 28·7 per cent of all those who answered this question. In addition to this percentage in favour of sterilisation, there was another group of 3·2 per cent which was already sterilised, and as such, on the whole about one-third of the subjects interviewed favoured the

idea of permanent sterilisation. According to educational background it was found that 54·5 per cent of graduates, 51·3 per cent of undergraduates, 61·9 per cent of matriculates, 81·2 per cent of non-matriculates, and 69·3 per cent of illiterates did not favour permanent sterilisation. This was favoured mainly by males who had either 3 to 4 children and were between the age of 31 and 40 (42·9 per cent). In the age group of 16 to 30 it was favoured by 22·7 per cent, while in the elderly age group of 41 to 50 by only 11·1 per cent.

Of those who favoured the idea of permanent sterilisation as a method of family limitation, the majority favoured their own operation rather than of their female partners. Among matriculates and other less educated ones, about 60 per cent favoured their own operation, while the remaining 38 per cent favoured operation of their female partners. Of graduates and undergraduates more than 66 per cent favoured their own operation. Not much difference was seen amongst the various age groups, except that more than 40 per cent of males between the age of 26 and 40 favoured operation on their wives.

Conclusions

As pointed out by Agarwal (1960), there is considerable uniformity in the results obtained in various surveys conducted in different parts of the country. Our findings are also more or less on the same lines. Some of the important conclusions of this study are summarised below:

1. The majority of the people considered 3 to 4 children as ideal—the average being 3·7. This was closely related to educational background, age and number of living children present. Persons who were better educated, young, and had less than 2 children favoured the idea of 3 or lesser number of children, while in the remaining groups a majority desired to have 3 to 4 children for an ideal family.
2. Most of the males considered 3-4 years interval between two pregnancies as desirable—modal value being 3 years.
3. Knowledge regarding family planning as well as willingness to learn was found to be closely related to education, age and number of living children. About 65 per cent did not know of any of the family planning methods.
4. Willingness to learn family planning methods was highest among graduates and undergraduates (81·4 per cent), males with 3-4 children, and those between the age of 16-30 (88·0 per cent). In older age groups and less educated persons it varied from 60 to 65 per cent.

   But the percentage of people, willing to learn family planning methods, was definitely less than the percentage of people who were in favour of teaching such methods to the public. It could be stated that although people favoured such teaching, they were a little reluctant to learn themselves. It seems they lacked motivation for such learning.
5. Regarding teaching of family planning methods to female partners, very few were in favour of such an idea, and there again it was clearly related to age and educational background of males. Better educated people and those between 26 and 35 years were relatively more in favour of such teaching.
6. As to the place of such teaching for themselves and their female partners, a majority of young and educated males who thought such an idea desirable, preferred teaching in groups either in hospitals and clinics or in their homes.
7. Knowledge of contraceptives according to educational standards varied from 72·8 per cent in graduates to 15·4 per cent in illiterates. More knowledge regarding contraceptives was found in males between 16-35 years and better educated ones. Probably they were in a better position to learn such methods. Among those who knew about contraceptives, more than 65 per cent knew of only the condom as a method of family limitation. Other methods were very little known.
8. Coming to permanent sterilisation, this was favoured mostly by males between 31 and 40 years and those with 3-4 children. Above and under the above age group it was favoured by only a very few. Among those who favoured this method, young and educated subjects with less than 2 children favoured their own operation rather than their female partners'. In illiterates, non-matriculates and matriculates, permanent sterilisation of males was favoured by 42·0 per cent, while in males above the age of 25 years by 64·7 per cent.

On the whole it can be said that the type of approach, method suggested and the place of teaching should be properly selected according to

the age, educational background and number of living children.

Summary

This survey was conducted to elucidate the attitudes of urban males towards family planning, and is based on the data collected from interviews on 314 married males.

Results have been classified according to age, educational standard and number of living children present in a family.

The average number of living children present per family was found to be closely related to the educational standard and age of the males interviewed. Modal value for the number of children an ideal family should have, was found to be four.

Young and educated males were found readily agreeable to the idea of learning and discussing about contraceptives in groups, whereas older persons and illiterates were reluctant to discuss such subjects in groups and preferred an individual approach.

More than 65 per cent of the subjects did not know of any family planning methods. Rubber condom was the most widely known method for family limitation.

Except for middle-aged males, the young and elderly subjects were reluctant of their wives learning family planning methods.

Permanent sterilisation as a method of family limitation was not liked much. Persons, who favoured it, preferred their own operation rather than of their female partners.

Acknowledgments

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PRACTITIONERS' SERIES

OXYGEN THERAPY

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All-India Institute of Medical Sciences
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With better understanding of the physiology of respiration and anoxic states, the status of oxygen therapy in clinical medicine has been well established. It is essential that the medical profession be familiar with different aspects of this important subject. As yet oxygen therapy is considered primarily a hospital treatment and even so in the peripheral hospitals facilities and equipment do not permit its frequent and correct application. Indications and technique of this therapy are briefly revieved, so that the general practitioner may not feel hesitant or handicapped to employ oxygen in practice. There is no reason why in suitable cases oxygen therapy cannot be effectively applied, not only in the patient's home but also at the spot in such situations as drowning, poisoning with various agents or road accidents. An attempt has been made to familiarise the practitioner with the simplest to the most elaborate means of oxygen therapy.

Historical

Although oxygen was first prepared in 1727 by Hale, full credit for its discovery was given to Priestley who, half a century later, proved its importance as an essential component of air. Further landmarks were its application for resuscitation (John Hunter, 1776), in asphyxia of the newborn (Chaussier, 1780) and establishment of a pneumatic institute at Bristol with Sir Humphry Davy as its first director (1799). But the status of oxygen as a saver and giver of life and demonstration of its proper place in therapeutics was delayed till the first World War when Haldane (1914-18) used it in the management of pulmonary oedema following poison gases.

Preparation

The most frequently employed and economical means of preparing oxygen is by compression and liquefaction of air, and subsequent fractional distillation of oxygen from nitrogen after removal of carbon dioxide and other impurities. Nitrogen with a boiling point of $-196^{\circ}C$ boils earlier, leaving liquid oxygen which boils at $-183^{\circ}C$. Liquid oxygen is later allowed to become gase-

ous and is compressed under pressure equivalent to about 130 atmospheres (2000 lb. per sq. inch) in steel cylinders. Oxygen can also be obtained as a by-product of electrolysis of water when hydrogen is used for hydrogenation of edible oils in the manufacture of 'vanaspati'.

OXYGEN CYLINDERS :

It is tragic that many practitioners and others entrusted with the care of the sick are not familiar with the colour of oxygen containers, and accidents, often fatal have happened by administration of a wrong gas. It cannot be too strongly emphasised that every medical student, doctor, nurse, midwife, nursing and other medical attendants must be familiar with the colour of oxygen cylinders and oxygen therapy equipment.

Oxygen cylinder should be recognised by the following characters :

(a) Colour—The body of the cylinder is black and there is a white broad band near the neck of the cylinder.
(b) Letters oxygen or its symbol O_2 are embossed on the cylinder valve.
(c) Label bearing the description of the cylinder contents is attached to the body or neck of the cylinder.

A 40 cu. ft. oxygen cylinder on a stand is shown in Fig. 1.

Basis and Indications of Oxygen Therapy

Atmospheric air contains 21 per cent of oxygen and at the sea level (760 mm. Hg pressure) 95 per cent of haemoglobin in the arterial blood is carried as oxyhaemoglobin. The alveoli under the above stated condition have 14 per cent oxygen which represents a partial pressure of 100 mm. Hg (out of total atmospheric pressure of 760 mm. Hg). A small quantity of oxygen (0·24 ml. per cent) is carried dissolved in plasma but the major portion (19 ml. per cent) as already stated is carried in loose combination with red blood cells. In an individual made to breathe 100 per cent oxygen the alveolar oxygen tension can be raised to 670 mm. Hg at sea level, but the nearly seven-fold increase in tension of alveolar oxygen can only slightly raise the amount of oxygen carried by red cells, since haemoglobin is already 95 per cent saturated. Plasma concentration of oxygen however can increase from 0·24 to 2·2 c.c. per cent.

At rest an adult consumes 300 ml. of oxygen per minute but this can be increased manifold during exertion.

In certain pathological states diminished amount of oxygen may be available to body tissues, and this leads to an anoxic state. Examples of such disorders vary from decreased available oxygen in the alveoli due to respiratory obstruction, altitude flying, infections and insufficiences of lung tissue, and respiratory insufficiencies (e.g. poliomyelitis) to decreased oxygen carrying capacity of blood (e.g. anaemias, haemorrhage and carbon monoxide poisoning) or to stagnant or histotoxic anoxic states due to circulatory failure or certain poisons (e.g. potassium cyanide and deep planes of general anaesthesia). Common medical conditions which a general practitioner may come across or where use of oxygen can be life saving include pneumonias, congestive heart failure and pulmonary oedema.

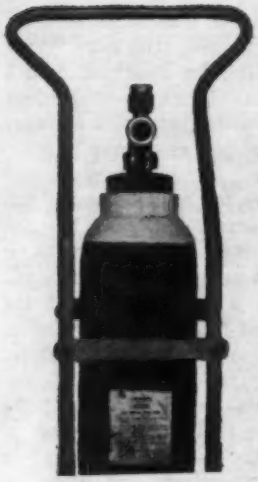
Danger of Oxygen Therapy

Ill effects such as convulsions, contraction of visual fields and pulmonary oedema have been attributed to prolonged therapy with high oxygen flows. While it is accepted that administration of pure oxygen at pressures higher than that of the atmosphere may be harmful, it is safe to employ oxygen inhalations of 60-80 per cent at atmospheric pressure over days provided the gas is adequately humidified. Permanent blindness due to retrolental fibroplasia has been noted in premature babies given 100 per cent oxygen over a long period. Possibly the ill effects of prolonged use of pure oxygen at high pressure are due to imperfect elimination of CO_2 as a result of adequate oxygenation of tissues by increased plasma-dissolved oxygen, consequently preventing the reduction of oxyhaemoglobin which is essential for transference of CO_2 from tissues to the lungs. Other adverse effects of oxygen therapy, particularly when high flows are employed, may be seen in patients who are subject to chronic hypoxia or increased CO_2 blood levels as a stimulus to respiratory centre or cerebral cortex. Depression of respiration, cerebral depression or coma may follow such therapy in patients suffering from chronic cor pulmonale, e.g., emphysema or chronic laryngeal or bronchial obstruction.

Methods of Administration

Brief mention will be made of the various methods of oxygen therapy and those considered more practicable and useful will be discussed in detail.

The unscientific method of holding a glass funnel delivering a weak stream of oxygen some distance from the patient's face has nothing to recommend it. It is also dangerous to connect an oxygen cylinder, fitted with a needle type fine adjustment value without pressure reduction, to a catheter placed in the patient's nasopharynx, because very high pressures can be communicated



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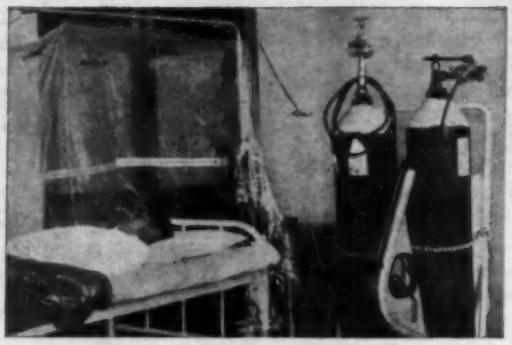

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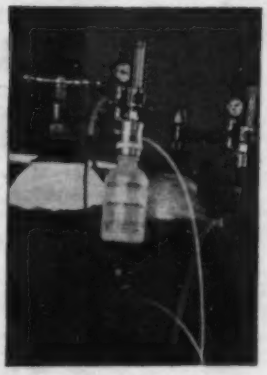

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FIG. 1—SHOWING AN OXYGEN CYLINDER WITH BLACK BODY AND A WHITE BAND NEAR ITS NECK AND TYPICAL LABEL DESCRIBING ITS CONTENTS. FIG. 2—SHOWING OXYGEN TENT IN ACTION. FIG. 3—SHOWING TWO MCKESSON'S OXYGEN THERAPY UNITS FITTED TO OXYGEN CYLINDERS.

to the tissues. Elaborate oxygen tents, particularly the modern ones which have built-in refrigeration units for air conditioning and control of humidity are efficient and comfortable. These 'iceless' oxygen tents employ the principle of circulation of the gas contents in the non-inflammable plastic canopy enclosing the patient's head and trunk, cooling it, removing excessive humidity, absorbing carbon dioxide by passing the gases over soda lime and recirculating it along with freshly added oxygen. The cost of equipment and maintenance naturally restricts their use in hospitals only.

An oxygen tent is shown in Fig. 2.

Simpler models of oxygen tents, hoods and boxes are available wherein ice is employed for cooling. An electric pump is usually incorporated for circulation of gas contents of the tent over ice and soda lime.

Larger hospitals may have 'oxygen rooms' or 'oxygen wards'. Though capable of treating many patients simultaneously they are expensive to maintain and involve considerable fire hazards.

SIMPLE AND EFFICIENT METHODS OF OXYGEN THERAPY FOR HOSPITALS AND FOR GENERAL PRACTICE

The essential requirements are two large or medium sized oxygen cylinders fitted on a portable stand, cylinder key, a device to tap the cylinder contents, register the cylinder pressure (and thus its contents), reduce the pressure to a workable safe level, measure the flow of oxygen (in litres per minute), entrain room air for dilution at a desired concentration by injector device, and for humidifying and delivering the resultant mixture to the patient.

The following two methods are considered efficient:

1. A combined set of pressure gauge, pressure reducing valve and flowmeter (Mckesson's, B.O.C. or Drager's) is fitted to the oxygen cylinder. The outlet of the valve is connected to the jet humidifier and the oxygen bubbles through water. Humidified oxygen is delivered to the patient through a catheter lubricated with an analgesic such as anethaine or xylocaine jelly and inserted in the nasopharynx.

Two Mckesson's oxygen therapy units fitted to cylinders are shown in Fig. 3. One is fitted to a humidifier and nasal catheter, while the other is fitted with a diluter and B.L.B. mask.

2. The combined pressure gauge, pressure reducer and flowmeter unit as described above is connected to a diluter (Mckesson's) which entrains air from the rooms, delivering any desired concentration of oxygen (40 to 100 per cent) in the resultant mixture. By rotating the sleeve of the diluter, small or large holes are uncovered, and the oxygen leaving the cylinder creates a negative suction on the venturijet principle and entrains room air. It is possible to entrain 3 litres of room air with its natural humidity when 2 litres per minute of oxygen flow are leaving the cylinder, resulting in the final flow of 5 litres per minute with 40 per cent oxygen content. The final

mixture takes into account, the atmospheric oxygen in the air drawn in for dilution. The diluter is a small handy gadget which considerably economises on oxygen. This deserves wider application. The diluter delivers a preset oxygen mixture to the patient, through a B.L.B. mask (nasal or oronasal), the latest types of which are provided with an arrangement so that the patient may not breathe back his expiration, thereby eliminating the possibility of increased CO_2 in the breathing circuit.

We have employed these two techniques frequently and consider them handy, sturdy and reliable. We have carried out measurements both of their flow rates and final oxygen percentages and find them extremely accurate for clinical application. If special pressure reducing valve and flowmeter device is not available, an improvised arrangement is possible wherein oxygen is led from the cylinder through a fine adjustment valve into a Woulfe's bottle, half filled with water, and oxygen after bubbling through water is led to the patient by a nasal catheter. The Woulfe's bottle will serve the following purposes:

(a) It gives an approximate idea of the rate of flow.
(b) It reduces the gas pressure to safe levels. High pressure will break the glass bottle or blow its cork, without damaging the patient.
(c) It will humidify oxygen. (However humidification is only partial and resistance to gas flow may occur. The method is satisfactory as a temporary arrangement only for brief periods).

Oxygen Therapy Equipment

Cylinders—Mention has already been made of oxygen cylinders. These are available in various sizes and fitted with different outlet valves.

For oxygen therapy 40 or 100 cu.ft. sizes fitted with bull nose type outlet are considered suitable. When full, the 110 cu.ft. cylinder holds about 3,100 litres of oxygen and a reasonable forecast can be made as to how long this will last. With a flow of 3 litres per minute, for example, such a cylinder will last nearly 17 hours of continuous use. In any case it is essential that a full cylinder should be available at the spot as reserve.

Pressure gauge—This is incorporated in modern pressure regulators for oxygen and a full cylinder registers a pressure of 2,000 lb. per square inch (130 atmospheres). Since oxygen is filled in the cylinders as a gas under pressure, the pressure registered is an accurate index of the residual contents. A half-full oxygen cylinder, for example, will register a pressure of 1,000 lb. per square inch.

Pressure reducing device—Pressure reducing device and a flowmeter to reduce the pressure to 15-30 lb. per sq. inch (1-2 atmosphere) and to measure the flow rate respectively are often incorporated along with a pressure gauge in a single gadget as already mentioned.

Breathing masks—These are made of thin latex rubber and provided with a reservoir bag. They are made to fit the nose or noses and the mouth (nasal or oronasal type). B.L.B. mask is the familiar type in common use, and recent ones incorporate a mechanism to prevent expiration returning to the bag and a safety air inlet which admits room air in case of failure of oxygen supply from an unnoticed empty cylinder. Alternatively, disposable polythene masks (polymask) are available. These are hygienic but rather expensive. Cylinder opening key and spanner for rapid change of an empty cylinder should be handy. It is an advantage when employing oxygen therapy over long periods in oxygen tents to analyse gas samples from the patient's hood or canopy. These can be simply and instantaneously carried out by Beckman's oxygen analyser model G for oxygen analysis (Fig. 4) and by Drager's carbon dioxide indicator for CO_2 estimation (Fig. 5). These are

Fig. 4—Showing Beckman's Oxygen Analyser.

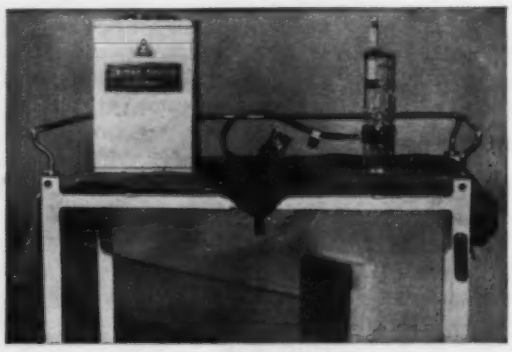

Fig. 5—Showing Drager's Carbon Dioxide Indicator.

simple handy inexpensive instruments and are capable of giving instantaneous bedside results which are fairly accurate for routine clinical use.

Precautions

Inflammable material burns faster in an oxygen-rich atmosphere. Failure to take requisite antifire precautions have cost many lives. Smoking by the patient or attendant in the vicinity must be forbidden and a notice should be prominently displayed prohibiting smoking or bringing any open light or flame. A patient must not have in his possesion cigarettes or matches. It must also be ensured that the plastic material used in the manufacture of oxygen tent hoods or canopies are of a non-inflammable material. It is dangerous to apply oil or grease on the cylinder outlets or on pressure reducing devices, as sudden release of gas under pressure can generate heat and cause ignition of the oil. For similar reasons it is dangerous to employ washers made from leather, as these cannot be made completely free from fat. Cylinder valve should be gently opened to avoid sudden escape of oxygen under pressure and heat generation.

Sources of Oxygen

Modern hospitals are provided with oxygen on the tap, like water or electric points. Pipe lines of oxygen run in the walls providing connections wherever required, e.g., in the operating theatre, recovery ward, anaesthetic room and acute diseases ward. Batteries of large sized cylinders located in special rooms in the basement form the source of supply, and when one battery of cylinders runs empty, an automatic control switches on the reserve set of cylinders, and at the same time switching on a warning light that the empty cylinders must be replaced by full ones.

In some large hospitals liquid oxygen is supplied by the manufacturers in special lorries and the gas is transferred to a battery of cylinders which are permanently installed. The liquid oxygen however has to be changed to gas by heating.

In war time or in remote areas oxygen generators on trailers can manufacture oxygen at the spot by compression, liquefaction and fractional distillation of air.

In the last war limited supplies of oxygen were obtained from 'chemical candles' on the principle of ignition of a chlorate in air tight chamber in presence of a catalyst. However, for routine use compressed oxygen filled in steel cylinders, as sold by oxygen manufacturers, is the source of choice.

Apart from inhalational oxygen therapy, other means of oxygen therapy with a limited or doubtful therapeutic value include intravenous, subcutaneous, intra-articular, intragastric and local application of oxygen. Of these, perhaps intragastric oxygen to tide over the anoxic crisis in the newborn, when pulmonary ventilation due to mechanical or technical difficulties is not possible, is the only form of oxygen therapy which is worth clinical application. A double lumen catheter (or 2 catheters tied together, one projecting an inch beyond the other) may be passed in the stomach, one lumen being employed for oxygen flow and the other for escape of the gas to prevent undue stomach distention.

SPECIAL ARTICLES

THE PROBLEM OF TRACHOMA IN INDIA

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Of the primary eye diseases (with or without general eye signs) which are communicable by direct spread, many are controllable. They are often the main causes of blindness in this country. They include the following: (1) ophthalmia neonatorum, (2) gonorrhoeal purulent conjunctivitis, (3) diphtheritic conjunctivitis, and (4) trachoma. These diseases are curable and prophylaxis is possible. In this paper the various aspects of trachoma are discussed.

Trachoma

Trachoma is not a problem in those countries where it is rare, and where every new case can be reported to the health authorities, isolated if necessary, and treated until cured. Such a course is not possible in India where trachoma is not only common but forms 33 per cent of all the eye cases. This high incidence varies from State to State. It will be higher in places where control measures are more difficult because of (1) poor hygiene and bad sanitation; (2) lack of proper knowledge regarding aetiology, course and outcome of the disease; (3) lack of resources for (a) prophylaxis, (b) mass treatment and (c) follow-up; (4) difficulties in mass diagnosis; and (5) poor resistance.

Trachoma is not a very infectious disease. Only three authentic cases of trachoma were found among the American troops who during the last

World War were stationed among a population highly contaminated by the disease.

A few simple precautions, such as meticulous cleanliness of the hands and the use of an individual's own towels, will suffice to prevent the disease, because the causative virus, which is found in tears and secretions from the affected eyes, does not survive long outside the human body.

A few years ago, a team of wrestlers travelled throughout India giving exhibitions. One of them was suffering from trachoma. A wrestler often inflicts very painful 'holds' on his opponent ; and he may press heavily on this opponent's eyes in order to put him out of action. In a few months most members of the team were found suffering from trachoma.

In addition to towels and hands there is also the danger of the 'kohl' stick which is largely used in the middle east. It is used by the whole family without washing, and the same finger is used throughout. This is due to ignorance that she may spread the disease from one child to another.

Flies swarm in certain regions. Their role in the transmission of various forms of seasonal conjunctivitis (another formidable eye complaint) has been well established.

The causative virus is a minute parasite which lodges in the human conjunctival and corneal cells where it multiplies and forms the 'inclusion bodies'. These virus colonies are often called 'Prowazek-Halbergaedier bodies' after the two German scientists who observed them for the first time in 1907 in Java.

Although these vjruses are found only in the most superficial cells, the deep tissues are also rapidly affected (it appears that the parasite secretes a toxin which acts as a veritable poison on these tissues). The disease soon becomes manifest in small granulations which raise the conjunctiva and give it the characteristic rough and uneven appearance. In fact, it is from this that the disease takes its name, for 'trachoma' in Greek means 'a crag—a roughness'. At the same time the cornea is affected by a kind of opaque film which descends from its upper edge, this is the 'pannus'. In some patients, particularly among the youngest sufferers, spontaneous cure may occur at this stage. The film clears up more or less, and the granulations disappear leaving behind, as a rule, very fine cicatrices.

In the great majority of cases, however, and particularly in countries where 'seasonal conjunctivitis' is also prevalent, and in cases where the patient's occupational or home surroundings cause frequent eye irritations (factory smoke, dust, etc.), the disease continues for years. It may even drag on for a lifetime with constantly recurring painful acute periods.

Studying 5,000 cases of trachoma in the Medical College, Lucknow, we find that the family history is positive in 2/3rds of the cases. The condition may be insidious in onset in 2/3rds or sudden in 1/3rd of the cases in the form of superadded acute or subacute conjunctivitis.

The condition usually manifests itself in summer months or in the rainy season. The condition is equally distributed in both sexes.

In 95 per cent of the cases some degree of discharge is usually present. Diminution of vision is present in one-half of the cases. On the basis of MacCallans' classification stage I is 8·6 per cent, stage II 68·4 per cent and stage III 38·0 per cent.

Inclusion bodies were present in 100 per cent of cases of trachoma-I, 46·4 per cent of trachoma-II and 13·0 per cent of trachoma-III.

Children are more vulnerable to the contagion than adults, not that the disease is hereditary but because children may be contaminated by parents or by playfellows suffering from the disease.

Active public health measures are the first line of defence against trachoma. They are especially effective if undertaken in schools where more active and early stages (in less scarred form) of trachoma are seen and where children can readily be kept under treatment. School children should be taught how the disease spreads and how it can be prevented. Facilities should be made available for routine examination of every student attending school or college. The facilities at present available in schools are very meagre.

The general public should also learn how trachoma is preventable and what precautions are necessary for the purpose.

Pilot study in North Africa proved fly control to be effective in preventing acute ophthalmia. The incidence of acute seasonal conjunctivitis, the bed on which trachoma is born, falls with the decline in the fly incidence following the use of D.D.T. and allied insecticides.

Arrangements should be made for cinema shows of 15-20 minutes' duration instructing the general public as to how by taking a few precautions they can prevent trachoma, and thus prevent economic loss, and lighten the responsibility for a large number of invalids either in the family or in the State. Radio talk is another medium for acquainting the public with prophylaxis, aetiology, course and results of treatment of the disease.

To combat the difficulty in mass diagnosis every public health officer or private practitioner

must be keen on diagnosing trachoma at an early stage and should be conversant with effective treatment for the control of the disease.

Poor resistance can be tackled on a mass scale by raising the standard of living.

For tackling trachoma on a mass scale the services of ophthalmologists alone will not suffice. It should be the duty of all medical men to try to eradicate this disease by mass scale measures. Trachoma is neither a rural nor an urban problem. The urban population, however, requires more care because of congestion, bad hygienic and insanitary conditions in slums which exist in every city.

Apart from school children, areas in the city where poor people live should be tackled on a mass scale. Factory workers should be checked and treated. Similarly, parents of school-going children, relatives, and children of pre-school age should be treated at their homes by sulphonamides orally once a day. In severe cases sulphonamides should be administered by parenteral routes also.

Different workers find different drugs to be of value. Trachoma, as found in different States, may be due to different strains of the virus and this may account for different drugs proving useful in different stages. The last word regarding treatment has yet to be said, until we know more about the trachoma virus and the diagnosis becomes more certain and easy.

Trachoma is both preventable and curable. The fundamental approach should be prophylaxis. On completion of treatment the conjunctiva becomes free of inclusion bodies ; the patient is rid of his symptoms and he can resume his place in the society without endangering his family, friends, or neighbours.

Our knowledge about trachoma is meagre and the following questions need answering :

1. Are children more susceptible than adults?
2. To what degree are infectivity, clinical development and duration of the diseaese affected by ocular trauma or superimposed infections, epidemic conjunctivitis and the like?
3. Are there persons who are partly or entirely resistant to the disease and if so, why?

Regarding mass treatment, the best drug we found was a combination of chloramphenicol 1 per cent with sulphacetamide in the form of ointment (eyemide). The drug is applied four times daily for two months and repeated, if necessary. The result of treatment is shown in Table 1.

TABLE 1—SHOWING RESPONSE OF EYEMIDE IN TRACHOMA

Duration of symptoms	Responded	Relieved	Cured
Less than 3 months ...	95·5%	89·0%	82·0%
More than three months ...	90·0%	82·0%	75·0%

Most of the relieved patients became asymptomatic within 10-14 days of treatment and got cured in 5-6 weeks' time. The 'inclusion bodies' disappeared from epithelial scrapings in 3-4 days.

FIELD TRAINING FOR INTERNS IN SOCIAL AND PREVENTIVE MEDICINE

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INTRODUCTION

Two of the most encouraging developments in medical education in recent times have been the recognition of the importance of teaching of social and preventive medicine to medical students in the pre-clinical, clinical and internship periods (Prasad, 1959) and the acceptance of the need for internship. A year of internship is now considered essential. Some countries have made the internship compulsory. In England this was enforced from January, 1953, and somewhat similar regulations have been passed in France, Germany, Isarel and elsewhere. In India, the revised recommendations by the Medical Council of India require a period of 6-12 months of pre-registration training, i.e., six months in those colleges which run two years' pre-clinical course and one year in those colleges which run one and a half year's pre-clinical course. A very important feature of the internship requirement in India is that there is provision for a 1-3 months period of rural field training, preferably done in the departments of social and preventive medicine.

Internship is primarily a vocational training. The emphasis in the training is on learning through doing. Even more important than learning the science of medicine in the internship period is the opportunity offered to the young doctor to learn the art of medicine, i.e., how to handle a patient and the people. For success will depend largely on this art, whether a patient or the community will have respect for and confi-

dence in the doctor. Another aspect of this training is that the young doctor is made conscious of the realities of life. He will realise that most physicians have to work under limited facilities. Midwifery as practised in a well-equipped hospital is very different from domiciliary midwifery in a villager's hut. Further, a patient seen in his home environment is often a different person from a medically similar case seen in a hospital bed or in a clinic. The patient in his home is often under the influence of the family's reactions to the disease.

Why We Need to have Field Training

Modern medicine aims at raising the level of the health of the people, but medicine, as practised in the hospitals, concentrates on the art of curing disease. It is high time that our chief attention was directed towards preventing disease and promoting and preserving health, or even creating health. "The concept of modern medicine had very much broadened as a result of the social and economic developments in recent years, and the scope of general medical practice should include not only curative but preventive and restorative aspects" (W.H.O., 1960). "The first desideratum for the doctor who wishes to enter into the world of new medicine is a full acquaintance with the normal and a complete knowledge of means for its maintenance" (Newsholme quoted by Health Survey and Development Committee, 1946).

It is cheaper to make investments in health than in disease and doctors of the future will be concerned more with the maintenance of normal health than departure from normal, i.e., disease. It is therefore, necessary that the doctor should come in contact with the living conditions of the people, for in India nearly 85 per cent of the people lives in the villages. How many of our young doctors have any idea of the problems of the rural areas? Although India lives in her villages, about 10 per cent of the male and 20 per cent of the female students entering this Medical College had never been inside an Indian village. Only 10 per cent of the students had come from the villages. Practitioners of modern medicine should adjust themselves to the physical, social, biological and psychological needs of the rural people, otherwise there is bound to be opposition in the introduction of scientific medicine.

It has been suggested that the students should spend less of their time studying corpses and more studying the living, and that instead of a series of 'cases' they should follow families through health and disease. In this way, the students would learn to see the human being as a whole and not, as so often happens in a hospital, as 'the heart in bed five' (W.H.O., 1959). The family should be the unit of work and not the sick individual who first appears at the clinic. The students should pay due attention to the psychological and social factors operating in the family or in the community. Emphasis has to be laid on the study of the patient as a whole and stress needs to be given on the study of man in disease instead of the disease in man. The patient needs to be treated as a whole and not in segments. The importance of socio-economic and emotional factors in the causation of disease and in the maintenance of health can best be recognised by a student who enters the home of patients. For this enables him (1) to obtain a better understanding of the relation of health and disease to the total life of the family, (2) to observe normal growth and development, and (3) to appreciate the economic, social and emotional situations created in continued disease and disability.

Man is a *socius* (fellow or comrade) in a *societas* (group or community). Medicine should place emphasis on man and should study him in, and in relation to, his environment. Field work places the major emphasis on man as a social being and endeavours to study the ways in which the environment—physical, social, psychological and biological—influence his health. In such a context the investigation of social pathology, i.e., the relationship of disease to society, is very important. Its study leads us to social diagnosis and social therapy, by enquiry into the conditions or circumstances which led to the disease in the family and the community. In other words we need to study the natural history of a disease process in a community and think in terms of the levels of prevention which can be applied (Leavell and Clark, 1958). For example, ankylostomiasis may be widely prevalent in a community (in a sample survey in Sarojini Nagar, Lucknow, its infestation in the population was found to be 51·0 per cent). Treatment of the disease will not solve the basic problem. One has to find out its social pathology in order to evolve a good social therapy. The disease is directly connected with the habits and customs of the people. Even if treated, reinfestation will occur unless through health education the people are made conscious about its spread, and until they install sanitary latrines for the safe disposal of the excreta. To persuade at least one family to change its habits

involves a good deal of the study of human behaviour.

According to this concept a complete diagnosis includes clinical diagnosis plus social diagnosis, and complete therapy includes social therapy. In order to implement a community health programme with active participation of the people, one has to take into consideration the culture of the people and their economics, politics and religion, the education and the ability of the people to understand, the existing health practices, prejudices, attitudes, beliefs, value systems and prestige complex, the leadership pattern and philosophy of life. Without this we cannot succeed whether it is a programme on environmental sanitation or family planning. This needs self-education before one can impart health education.

Besides developing a community outlook, the field study enables a young doctor to interpret health and disease in relation to the social background of the life of the people and helps him to understand rural health needs. He must appreciate that improvement in community health is mainly due not to what is done when people are ill, but to the fact that they do not become ill when the environment (physical, social, psychological and biological) in which they live, is healthy. Health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". In order to fulfil this concept of positive health or health at optimum level, medicine has to take into consideration all the contingencies of man during his life not as an individual but as a member of the family and a member of the society. The purpose of social medicine is to study man within his environment in order to give him life and give it more abundantly.

Study of Social Anatomy, Social Psychology and State of Health

"A community is more than a collection of individuals. Its members are part of a social system ; they perform social roles and are bound to each other directly or indirectly by a network of rights and obligations" (Paul, 1955). The knowledge of the structure and functioning of society is of fundamental importance for a medical man. This can be learnt by a study of the society, i.e., the families which make the society. Therefore, a study of rural families becomes important. Then only can we answer basic questions like: (1) What constitutes a village and its society, what are its problems and how can they be solved? (2) In what type of houses do the families live? (3) What is their source of water supply? (4) How is human and animal waste disposed of? (5) What vectors of disease surround the villages? (6) What is the population structure and family size and at what age do villagers marry? (7) What is the family occupation, what is the family income and what is the family expenditure, i.e., what is its economics? (8) What is the educational standard in the family? (9) What is the mortality and morbidity experience? (10) What is the state of health of the families at present, including parasitic infestation? (11) What food do the families produce, what do they eat and what is their state of nutrition? (12) To what extent have the families availed themselves of the medical services provided in the area? Such a study will help us in finding out the birth rate, the death rate, the infant mortality rate, the maternal mortality rate, the specific morbidity and mortality rates, the marriage and fertility rates, the incidence of improvident maternity, and childbirth, child survival and child loss indices etc. in the population.

Role of the Rural Health Centre in Field Training

In order to develop in a doctor the basic concept of "a social physician protecting the people and guiding them to a healthier and happier life," whole-time departments of social and preventive medicine have been established recently in the medical colleges (this department was established at K. G. Medical College on March 15, 1958) with rural field practice area for field training (the Sarojini Nagar Rural Health Centre of this department has been functioning since 1959). The provision of a field practice area for the department of social and preventive medicine is analogous to the provision of laboratories and hospital beds for teaching and research in other disciplines. A rural health centre forms the teaching and social research laboratory, where practical experience can be acquired by the students in studies of community health problems.

Field Training of Interns at the Sarojini Nagar Health Centre

The interns, who work for a month in this department, have a week of 'participative rotating internship' in which they observe the working of the rural community health organisation, i.e., the Community Development Block of Sarojini Nagar,

its organisation and functions, especially the role of a village level worker and the organisation and functions of its primary health centre. They spend a day with the field staff on each of the seven functions of the primary health centre, viz., (1) medical relief, (2) maternity and child welfare, and family planning, (3) environmental sanitation, (4) epidemic control, including disinfection in the field, (5) vital statistics and mortality and morbidity data in the primary health centre (their collection, compilation and presentation), (6) school health work, and (7) health education.

A batch of six to eight interns is divided into three or four sub-groups of two interns each. Two interns in the sub-group are allotted one village under a guide for 'guided comprehensive community health practice'. The interns are required to carry out sociomedical surveys supported by laboratory examinations in a few families (each intern is allotted three families) in accordance with prescribed schedules for collection of data on population, income, housing, sanitation, communicable diseases, nutrition and diet, morbidity, disability, mortality, habits, beliefs, customs, faiths, attitudes, practices and people's values etc. The data so collected are analysed and tabulated by them and presented as a report, which is discussed in the weekly seminars and assessed and given marks. The seminars suggest and plan social therapy and initiate action in the families for the betterment of health. The interns take a week to know the village and the families, a week to carry out surveys and another week to initiate action, achieve some of the targets and analyse the data. The interns maintain a daily diary of their work and observations and include the medical relief given in the village. Such surveys give them an introduction to research.

The villagers fail to co-operate or participate in a health programme unless we try to meet their first and principal health need, i.e., treatment of ailments.

The interns get an opportunity to see at first hand the basic installations (environmental sanitation is at present the most important aspect of community health work) for safe drinking water supply, disposal of animal and human wastes, housing and ventilation, abatement of smoke, protection from insect vectors and rodents, and community sanitary facilities, etc. Each intern has to fulfil a target of educating the families in the village, so that at least one latrine, one smokeless *chula* (oven), one kitchen safe, and one soakage pit have been installed under his supervision. If possible, a supply of safe drinking water with a hand pump should be provided in the community. Another target for each intern is to give a health talk, using simple audio-visual aids, on a communicable disease or health problem to a group of villagers or school children.

Thus the interns spend a week on 'participative rotating internship' and three weeks on 'guided comprehensive community health practice'. On Saturday each week, a seminar is held of the staff and interns in which the work is reviewed, problems are discussed and suggestions are invited. Sunday is observed as a holiday. Each intern is provided with a cycle for travelling from the rural health centre to the villages.

Conclusion

The Department of Social and Preventive Medicine, K. G. Medical College was established only two years ago, and its Rural Health Centre at Sarojini Nagar has been functioning for a year only. Except for the primary health centre, which has sixteen general and four maternity beds, we do not have any building at present. A building has been rented to accommodate the office and workshop of the Rural Health Centre and two temporary sheds have been constructed for vehicles and stores. Even so, the life at the Rural Health Centre is more comfortable than the life in the villages. We, however, expect the interns to share some aspect of rural life as a part of their training. This is a *sine qua non* for understanding rural conditions and for training in rural work. The little hardship thus experienced, is accepted in a sporting spirit. We help the interns out of their difficulties as far as possible, but no work is possible in rural India without facing some difficulties. The villagers are generally very hospitable and it is for the intern to win their confidence and co-operation.

The interns thus get a pre-training evaluation and a post-training assessment in which marks are given. During the internship the number of trainees in each batch should be small. The interns should receive constant supervision, and a careful watch should be kept on their training. The young doctor in this formative stage needs to be encouraged to do community health work.

The interns have an exciting and stimulating experience and become familiar with the rural society in which the majority of us will have to work. It is hoped that this training which has been started from July 1, 1960, will bring the interns closer to the villages, and inculcate in them a preventive and social outlook. It will also promote in them a community outlook and help

them to interpret health and disease in relation to the social background of the life of the community. Finally the training, it is expected, will enable our young doctors to adapt their thought and action in terms of preventive and social medicine, and to carry out with confidence the integrated preventive and curative work in all aspects of medical activities. It will also help them to get adapted to the community development philosophy, team work method and team spirit, so essential for the successful working out of the primary health centres where the medical officer has to function as the team leader.

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CASE NOTES

FOREIGN BODY IN THE MALE URINARY BLADDER

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Although varieties of foreign bodies have been reported in the female urinary bladder, they are much less common in the male. An unusual length of electric cable, forming the nidus of a large vesical calculus in a young male was encountered by us and is reported below for its rarity and uncommon history.

CASE REPORT

D. C., male, aged 25, presented with complaints of increased frequency of micturition and haematuria for the last 4 months, following a bout of drinking. The blood passed in drops before or after the act of micturition and was accompanied by pain in the suprapubic region and in the penis. The intensity of symptoms gradually increased. About 2 weeks prior to coming to this hospital, he started having pyuria.

Personal and past history was not contributory. On examination, the patient was found moderately built, fairly nourished and intelligent with a pulse rate of 84/minute, B.P. 110/80 mm. Hg and temperature 99°·2F. Slight tenderness was elicited in the suprapubic region but no mass was palpable. Liver and spleen were not palpable. Other systems were essentially normal.

Investigations—Haemoglobin was 12·8 g. per cent. Urine examination revealed innumerable pus cells and red blood cells. Stool was negative. Urine culture showed *E. coli* sensitive to streptomycin.

Plain skiagram of the abdomen showed a foreign body (wire) in the region of the bladder (Fig. 1, *vide* Plate).

Exploration of the bladder showed a stone—phosphate deposits around the cable loop. The cable was found to be 13 inches in length (Fig. 2, *vide* Plate).

Postoperative period was uneventful and the patient made a complete recovery.

DISCUSSION

Access of foreign bodies to the urinary bladder may be through suprapubic wounds, injuries, accidents and surgical mishaps. The common route, however, is through the urethra.

Introduction *via* the urethra is usually resorted to for erotic excitation. Accidental introduction while attempting criminal abortions in the female is not unknown. The short expansile urethra of the female explains the frequency of foreign bodies in their urinary bladder. In the male, the tortuosity and length of the urethra is a deterrent to the introduction of foreign bodies. Nevertheless, cases are reported in the male where foreign bodies used for sexual gratification or uretheral dilatation found their way into the bladder.

A large majority of these patients have low grade intelligence. Perverted curiosity may also play a role. The patient reported here, was of average intelligence and denied any knowlegde of the introduction of the foreign body. As he related his symptoms to the drinking bout, in which he was deeply intoxicated, maybe some of his associates played the trick on him! But it is unusual for such a length of flexible cable to find its way through the male urethra without any damage to the urinary tract. Stone formation is all too frequent due to phosphate deposist on these foreign bodies.

Acute urinary symptoms such as pain, dysuria, frequency, haematuria and later pyuria, are usual in these patients. However, surprisingly a considerable number, particularly females, never develop urinary symptoms.

Diagnosis, although often suspected from the history, is made on roentgenological findings. Cystoscopic examination nearly always shows changes of acute or chronic cystitis with the associated foreign body.

Attempts have been made at removing the foreign bodies from the urinary bladder by solvents like carbon tetrachloride, but these methods do not always succeed.

Cystoscopic removal has been practised. Suprapubic cystostomy, though not advised as a primary procedure in all cases, is resorted to either in chronic cases or sharp, large, impacted foreign bodies, where other methods for their removal are less likely to succeed. Here the results are uniformly satisfactory.

SUMMARY

A case of vesical foreign body, a large electric cable, with calculus formation, in a young male, successfully treated by suprapubic cystostomy has been described.

PULSELESS DISEASE

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INTRODUCTION

The term 'pulseless disease' is applied to a clinical picture resulting from obliteration of one or more of the great vessels arising from the arch of the aorta. Two pathological types of obstruction are observed. In the younger age group in women, there is a diffuse panarteritis of unknown aetiology. The second type is observed in the elderly and is due to a combination of factors, viz., syphilitic mesaortitis with or without aneurysm, atherosclerosis and unusual arrangement of the great vessels. The reported case is of the primary type.

CASE REPORT

R. D., male, aged 19, was admitted to Stanley Hospital, Madras, on 4-5-1960 with history of recurrent attacks of fainting for a year and dimness of vision and pain in the nape of the neck and occipital region, for three months. The fainting was precipitated on change from the lying to the sitting position, and on many occasions he fell unconscious, for a few seconds each time. He had no convulsions.

Past history—Nothing contributory.

General examination—The patient was a young man moderately nourished, but underdeveloped for his age. He was ambulant and apyrexial. His limbs were equally warm. Pallor of the mucous membranes was noticed. The eyes appeared enophthalmic. No congenital anomalies were seen.

Cardiovascular system—The cardiac impulse was present in the fourth left intercostal space in the midclavicular line. A systolic thrill was felt over the right first interspace and suprasternal areas. Heart sounds were normal and no murmurs were heard over the precordium. A grade III high pitched systolic murmur with late systolic accentuation was heard over the right first interspace, clavicle and supraclavicular areas. There was no venous hum.

Arterial pulsations were seen over the suprasternal notch. Subclavian, axillary and brachial pulsations were absent on both sides. The radial pulse was feebly felt on the right and was absent on the left side. The common carotid, internal and external carotid pulsations could not be felt on either side. Superficial temporal pulsation on the right side was feebly felt and on the left was absent. Aortic pulsation and pulsations in the arteries of the lower limbs were normal. Carotid sinus response was normal on the right and hypersensitive on the left. Even moderate pressure produced giddiness for a few seconds. The blood pressure could not be recorded by the palpatory and auscultatory methods. The flush method (Gaertner, 1899) showed a mean arterial pressure of 110 mm. Hg on the right side, but could not be recorded on the left. The blood pressure in the lower limbs was 130/80 mm. Hg. Fundus examination did not show any abnormal change. The calibre of the vessels was normal.

Investigations—Urine—normal.

Blood—E.S.R., ½ hour 26 mm. and 1 hour 60 mm. W.B.C., 9,800 cmm. with polymorphs 78 per cent, lymphocytes 21 per cent, eosinophil 1 per cent. Platelets, 1,58,000/cmm. Prothrombin time, 20 sec. V.D.R.L., negative. Total serum protein, 7·9 g. per cent ; globulin, 4·75 g. per cent. Serum electrophoretic pattern, normal. Fasting blood sugar, 94 mg. per cent.

E.C.G.—Horizontal, moderate counter-clockwise rotation and forward rotation of the apex, no abnormal changes.

Skiagram—Forearm and skull, no arterial calcification.

Mantoux test (1 in 1,000 dilution)—negative.

Aortography—A needle 6″ × 1/16 mm. was introduced in the suprasternal notch, and was moved downwards, backwards and slightly to the right to pierce the ascending limb of the aortic arch (Thurbeck and Currens, 1958). Fifty ml. of diginol was injected rapidly. There was absence of opacification of the great vessels arising from the arch of the aorta. The dye was visualised in the collateral vessels in the axillary areas (Figs. 1 and 2, *vide* Plate).

Progress and treatment—The patient was given (1) prednisone, 10 mg., thrice daily and (2) tromexan, 300 mg., daily for a month. He gained fifteen pounds in weight and was free from syncopal attacks. The left radial pulse was feebly felt and the mean arterial pressure by the flush technique was 90 mm. The E.S.R. did not show any change. He was advised to continue treatment and to report for review two months later.

Discussion

The syndrome has been reported under a variety of names, viz., pulseless disease, Takayasu syndrome, reverse coarctation of the aorta and aortic arch syndrome. Pulseless disease, though figuratively, does not represent the magnitude of the disorder. Absence of pulse is not synonymous with absence of blood flow in the vessel. Aortic arch syndrome represents the site of affection rather than the pathological process involved. The term 'idiopathic chronic progressive brachiocephalic panarteritis' seem to express the syndrome better.

Robert Adams reported the pulseless syndrome in 1827. Takayasu (1908) noticed additional abnormal findings in the eye. Shimizu and Sono (1951) reviewed the ocular changes. Ash-upmark (1954) discussed the varied symptomatology in the group of cases. Ross and McKusick (1953) reviewed 100 cases of aortic arch syndrome which includes a large number of secondary type. The primary type is often noticed in Japanese women. Among 111 cases reported in Japan 100 were in women of the younger age group. Shikare (1921) from India reported absence of pulse in the carotids and upper limbs and autopsy showed aneurysm of the arch with antemortem clot. Sen Gupta and Ghosh (1957) reported absence of cephalic and brachial pulse and autopsy showed calcified plaques and clot occluding the mouths of all three branches. Rajagopalan and Nilakanta Rao (1957) reported absence of pulse in the left upper limb and autopsy showed alteration in the arrangement of great vessels at the arch, whip-like left subclavian artery with no lumen, pseudocoarctaion just below the left subclavian attachment, syphilitic mesaortitis and extensive atheromatosis with calcified plaques. Misra and Satyaprokash Agarwal (1959) reported it in two women and a man. Pahwa *et al* (1959) reported in detail the ocular changes observed in a female aged 27. Damany and Shah (1960) reported a case in a male aged 40, of syphilitic aetiology.

Aetiology—The factors producing the lesion are unknown. Various causes like collagen disease, mesenchymal abnormality indicating a congenital basis, and tuberculosis have been mentioned with no definite pathological evidence. The only positive laboratory finding has been an increase in the E.S.R.

The site of lesion is at the arch of the aorta, involving the roots of the great vessels arising from the arch. The intracranial vessels are spared. There is thickening of the vessel with round cell infiltration of all the layers and a few Langhans' giant cells. Extensive perivascular adhesions are seen. Thrombosis of the vessels are noted which sometimes show recanalisation. Occasionally a vessel away from the arch, as the right subcalvian, may be affected. The result is relative ischaemia of the cranial half of the body with development of collaterals from the caudal half. The blood supply to the face is often sufficient by way of collaterals—the subclavian artery to the thyroid gland on to the superior thyroid artery to the external carotid artery and the vessels of the face. The blood supply to the brain is *via* the vertebral arteries to the circle of Willis, to the middle and anterior cerebral vessels. The nutrition to the eyes is defective resulting in loss of vision in severe cases. The blood supply to the upper limbs is *via* the pectoral branch of the thoracocervical trunk on to the thoracodorsal artery of the humerus and then to the deep brachial artery. There may be hypertension of lower limbs due to involvement of the renal arteries. This has justified yet another name for this disease, viz., 'Reverse coarctation of the aorta'.

The clinical features are grouped under the following :

1. *Ischaemia of the upper half of the body*—The patient has cervical pain, pain and tenderness over the vessels, fatigability and claudication of the arms, shoulders and jaw; pain, coldness, weakness and paraesthesiae of the arms, shoulders and neck. The visual symptoms develop gradually. The patient complains of flashes of light, field defects, change in acuity of vision, dimness on changing position and walking and blindness in the later stages. The objective findings usually are pallor and new vessel formation especially around the optic papilla, microaneurysm, sluggish blood flow, optic atrophy, retinal pigmentation, atrophy of the iris, cataract in the late stages, decrease in the intraocular pressure, enophtholmos and superficial keratitis. The cerebral symptoms include headache, giddiness, syncope, vertigo, epilepsy, transitory hemiplegia, hemiparesis, aphasia, mental and memory impairment and emotional lability. They are most troublesome by positional changes that reduce the cerebral blood flow.

2. *Signs of collateral circulation*—The presence of systolic thrill and murmur over the aortic area and in the supraclavicular areas is due to poststenotic dilatation or collateral vessels.

3. *Carotid sinus syncope*—The attacks of giddiness and syncope to which these patients are prone is due to hyperactive carotid sinus.

4. *General signs*—A few give history of fever.

Prognosis and treatment—Prognosis is variable depending on the extent of collateral circulation. When visual changes develop, the sight is lost permanently. Response to corticosteroids and anti-coagulants has been claimed to be good. The response noticed in our patient was palpable left radial pulse, less sensitive carotid sinus and subjective sense of well being. Favourable results have been observed after surgical procedures like thromboendarterectomy or an aortic graft.

Summary

A case of 'pulseless disease' in a male aged 19 is presented. Absence of arterial pulsations in the upper limbs, carotids, hypersensitive carotid sinus, systolic murmur over the right supraclavicular area and neck, and raised E.S.R. were the salient features in this case.

Aortography showed absence of opacification of the vessels of the arch. The response to corticosteroids and anticoagulants has been recorded.

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PEYRONIE'S DISEASE

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Peyronie's disease, first described by Francois de la Peyronie in 1743, is a rare malady of the penis, characterised by the formation of indurated areas or plaques in the corpora cavernosa and by deformity during erection. It has been variously designated as chronic cavernositis, fibrous cavernositis, plastic induration of the penis, strabismus of the penis or circumscribed fibrosis of the penis. Since the disease suffers from a multiplicity of names, all descriptive but none satisfactory, and because of our ignorance regarding its aetiology, Peyronie's disease is probably the best and the most satisfactory name. For it not only avoids confusion but makes no pretence of its pathological nature, conveys a meaning and pays a well deserved tribute to the discoverer. The rarity of the disease warrants the publication of reports of two cases encountered by us.

CASE REPORTS

Case 1—S. K., aged 57, Mahomedan, male, was admitted into the Hamidia Hospital on 8-3-60 with complaints of a dull aching pain in the penis, aggravated during erection, and deformity of the penis for the last six months. He was incapable of sexual intercourse. The symptoms were insidious in onset and there was no history of venereal disease. Excepting moderate enlargement of the prostate, nothing abnormal was detected on general and systemic examinations. There were no urinary symptoms. On local examination, the penis was found curved with convexity towards the right. There was diffuse induration of corpora cavernosa with three circumscribed, hard, tender plaques about $\frac{1}{4}''$ in diameter, one on the right side near the base and two on the left side in the mid-shaft. A Kahn test showed his blood to be negative. Soft tissue skiagram of the penis showed a curvature but no calcification (Fig. 1, *vide* Plate). One of the nodules, showing clinical evidence of calcification, was excised. The histopathological report reads as follows: "Two tiny pieces, hard in character and greyish-white in colour, were received. Both pieces were sectioned and kept for decalcification. The tissue showed chronic inflammation and areas of calcification" (Fig. 2, *vide* Plate). The patient was treated by deep x-ray therapy, the total dose being 1,600 *r* given in fractional doses. The pain was relieved but the deformity persisted.

Case 2—G. S., aged 50, Mahomedan, male, an accused in a rape case, was brought by police to the casualty department of Hamidia Hospital on 20-5-60 for examination. The patient had taken a defence plea that because of a disease of his penis he had no erections for the last ten years, and hence he was incapable of committing the crime.

On examination, the penis was found semi-erect and there was diffuse induration of the corpora cavernosa. There were two irregular, hard and tender plaques on the left side and a slight curvature with convexity towards the right side. There was no history of venereal disease and his blood for Kahn test was negative. The skiagram of his penis did not reveal any calcification. One of the nodules was excised for histopathological examination. Again there was found evidence of chronic inflammation but no calcification. The patient refused to accept any treatment.

DISCUSSION

The exact nature of Peyronie's disease is obscure. The consensus of opinion is that it does not represent, as some are inclined to think, an atavistic tendency manifested in the formation of a rudimentary os-penis

of lower animals and as such representing a phylogenetic structure. Bett (1951) as well as Hill (1951) opine that man never possessed os-penis which apparently exists in animals having poorly developed erectile tissue, for it appears to produce a rapidly erect state of the organ. No evidence of mammalian baculum has ever been found in the human penis. Moreover, in the animals, the single bone, useful as it is, is situated in the glans penis; in man, the plaques, usually multiple, are situated in the shaft of the organ.

Various factors have been assigned as possible causes, such as trauma, inflammation, local infection, gonorrhoea, tuberculosis, arthritis, syphilis, alcoholism, vitamin E deficiency, lymphopathia venereum, diabetes and arteriosclerosis. Its association with Dupuytren's contracture suggests a fibroplastic diathesis. A gouty diathesis has been suggested by some (Keyes and Ferguson, 1936) for the fibrous dysplasia. The evidence regarding the aforementioned aetiological factors is meagre and there is absolutely no proof in support of any specific agent. The ectopic formation of these calcified and even ossified plaques also occur in syphilitic gummata of the penis but that is a form of dystrophic calcification and as such an entirely different process. The histological evidence as found in these two cases would suggest a chronic inflammatory lesion and Livermore (1955) believes it to be the real aetiological factor.

The corpora cavernosa are usually diffusely indurated, probably representing the arteriosclerotic changes common at this age. The plaques may be single but are usually multiple, vary in size and shape, may involve any portion of the corpora cavernosa, or may completely cover them, but generally fuse with or form a part of the septum. Occasionally, they may be equally divided on both sides, there being then no deformity of the penis. Frequently they become calcified as in one of these cases and may then be visualised radiologically.

The presenting symptom is usually the deformity, though these patients may complain of a dull aching pain in the organ which becomes more severe during erection. The degree of deformity depends upon the site and extent of the fibrosis and if it is severe, coitus may be difficult and even impossible.

No satisfactory treatment of Peyronie's disease has yet been devised. The use of mercury, arsenic and potassium iodide appears to be of doubtful value, and so would seem the subcutaneous injection of fibrolysin. Apart from the general measures advocated according to one's conception of the aetiology many local treatments have been suggested, such as massage, ionisation, galvanism, high frequency current, electrolysis, diathermy, ultraviolet rays, radium and x-rays. Though Corbus (1926) and Wesson (1943) reported success with diathermy, the general opinion seems to be that deep x-rays, radium or both in conjunction give the best results. Soiland (1944) points out that practically all forms of irradiation give equally satisfactory results. X-rays have given good results in the hands of Herman (1938) and Graham (1951). Schourup (1945) advises radiation with 300 to 2000 *r* in fractional doses. The use of radium plaque application has given good results (Burford, 1940; Collins, 1946) and cure with radium needles has been reported (D'Abreau, 1943). The use of radium (Soiland, 1944) is followed by loss of libido inspite of good screening of the testicles.

The surgical excision of the plaques, particularly in the presence of calcified and ossified deposits, has been reported workers (Zur Verth and Scheele, 1903; Bromberg, 1921; Lowsley, 1943). It has also been pointed out (Mackay, 1940) that surgery may prove to be harmful rather than beneficial, the resulting scar producing more deformity than the original fibrous area. Moreover, apart from the danger of haemorrhage and infection, the high recurrence rate precludes the use of surgery. Thus, for want of a consistently satisfactory treatment it is probably best to leave these patients alone (Graham, 1951).

Another interesting feature of the disease is its medicolegal aspect. Both these patients expressed their inability to perform coitus satisfactorily because of the deformity and pain during erection. Case 2 was accused of rape which he vehemently denied stating that he was impotent for the last ten years owing to the diseased penis. In our opinion, though these patients are physically handicapped for a satisfactory coitus, they are still capable of effecting penetration and hence capable of committing rape.

Summary

Two cases of Peyronie's disease, a rare malady of the penis, characterised by formation of indurated plaques and deformity, have been reported.

The aetiology, pathology, clinical features, treatment and the medicolegal aspect of the disease have been discussed and the pertinent literature reviewed.

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ORAL HYPOGLYCAEMIC AGENTS

Ever since the discovery of insulin as an effective, practically nontoxic and physiological substitution therapy for the treatment of diabetes mellitus brought on by a disturbance in the secretion or action of insulin, attempts have been made to find an equally, or at least relatively equally effective and nontoxic, oral hypoglycaemic agent which may relieve the patient from the unpleasantness of one or more injections a day almost for the rest of his life and from the necessity of measuring the dose of insulin accurately and of handling the syringe aseptically. In 1942, Janbon and his colleagues[1] first observed the hypoglycaemic effect of certain sulphonamide derivatives. Several other workers subsequently investigated the properties of a number of closely related derivatives in normal and depancreatised animals. In 1953-54 sulphonamide-*n*-butylurea (BZ 55, carbutamide) and the urea-butyl derivative (DH 860, tolbutamide, orinase) were prepared and found to be hypoglycaemic in normal animals[2, 3]. As soon as the hypoglycaemic effect of carbutamide was discovered, different workers[2, 4, 5] showed that in elderly diabetics, especially in the obese and in those who had not had insulin for several years, this compound could abolish the glycosuria, lower the blood sugar and substitute for moderate amounts of insulin. At that time it was the belief of the German group of investigators that the action of sulphonylurea was upon the alpha cells depressing the secretion of glucagon, but Mirsky *et al*[6] have suggested that the hypoglycaemic action is due to a non-competitive inhibition of insulinase and a consequential decrease in the destruction of endogenous insulin.

In 1956, Canadian investigators published their work on carbutamide[7] and German workers published theirs on tolbutamide[8]. The work of the former agreed, on the clinical aspect, with that of the latter and of other workers in Europe and the U.S.A. The tentative conclusions then arrived at by the German group[8] were that patients who needed less than 40 units of insulin a day, or who were still able to produce sufficient indigenous insulin could easily be maintained on tolbutamide. The metabolism of depancreatised or of completely alloxan-diabetic animals was as little affected by the drug as that of the juvenile diabetics. Neither the clinical nor the experimental animal observations point to effects on the adrenal or pituitary systems; mobilisation of liver glycogen by adrenaline and glucagon seems to proceed more slowly under the influence of tolbutamide; and sulphonylureas do not act like

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insulin. According to the results of the investigations then carried out tolbutamide could be recommended as a therapeutic agent to certain groups of diabetics, but no definite stand could be taken as to the problem of continued treatment.

The compounds became available to American investigators in November 1955. Their experimental and clinical studies in 1955-56 showed[9] that these drugs were effective in controlling the glycosuria and hyperglycaemia in many diabetics when given orally ; that their oral administration was the only apparent advantage they had over insulin ; that they had the disadvantage of being ineffective during acute complications, such as severe infection or trauma ; that they exerted no benefit in juvenile diabetics, except in rare instances ; that they were without effect in that relatively small segment of the older age group in which ketonuria promptly occurs following the withdrawal of insulin therapy ; and that if insulin were not available and if it were not the physiological agent that it is, or if good control of the diabetes in the overweight group could not be achieved by dietary means, there would be justification for a prompt and wider clinical adoption of the sulphonylureas.

Carbutamide was found to possess all the toxic effects that are the characteristics of sulphonamides and was finally discarded in October, 1956, in the U.S.A. after reports of several cases of bone-marrow depression and of jaundice. Tolbutamide, which is not a sulphonamide, continues to be used extensively. Its toxic effects are very rare and relatively trivial, such as faint mild rashes, and tendency to undue flushing after taking alcohol, but exacerbation of manifestations of peptic ulcer, including bleeding[10] and perforation[11] after many months of treatment and perhaps, very occasionally, aplastic anaemia[12] have been reported.

A little later, a new compound, chlorpropamide [1-propyl-3-(*p*-chlorobenzene sulphonyl) urea] came to be tried. Murray *et al*[13] found it effective in a single daily dose—an advantage over tolbutamide which has to be given in 2 or more doses a day. Walker[14], however, reported severe toxic effects, but these were found to be due to high dosage[15, 16]. Dolger[17] giving his figures of jaundice, which are undoubtedly high, states that the incidence of jaundice runs to about 0·4 per cent with 2 fatalities in 5,000 patients according to the manufacturer's own admission reported to them from the American experience alone. He further states that the actual incidence is immaterial since tolbutamide is definitely free from any hepatotoxicity regardless of the dose in a vast experience covering over a million patients throughout the world. In his own series of 3,000 cases treated with tolbutamide he has never encountered a single instance of hepatic dysfunction, let alone overt jaundice. Some are of the opinion that jaundice due to chlorpropamide is due to idiosyncrasy limited to certain individuals, but unfortunately such idiosyncrasy is undetectable before the drug is administered. Dolger argues that if it is due to idiosyncrasy it cannot be dose-related, but if it is dose-related, then certainly the margin of safety for chlorpropamide

[10] GELFAND, M. L.—*J.A.M.A.*, **171** : 258, 1959.

[11] BEASER, S.B .—*Ann. N. Y. Acad. Sci.*, **71** : 264, 1957.

[12] JOST, F.—*J.A.M.A.*, **169** : 1468, 1959.

[13] MURRARY, I., RIDDELL, M. J. AND WANG, I.—*Lancet*, **2** : 553, 1958.

[14] WALKER, J. B.—*Ibid*, **2** : 641, 1958.

[15] MURRARY, I., RIDDELL, M. J. AND WANG, I.—*Ibid*, **2** : 749, 1958.

[16] O'DRISCOLL, B. J.—*Ibid*, **2** : 749, 1958.

[17] DOLGER, H.—*Ibid*, **1** : 980, 1960.

is critically narrow, for cases have occurred with doses smaller than 500 mg. a day which is considered to be the optimal dose. The Council on drugs of the American Medical Association[18] has stated that "the influence of lower dosage levels to decrease the incidence of toxic effects remains to be seen". Popper and Schaffner[19] state that "the future is bound to bring more rather than less of drug-induced hepatic injury. The crucial question for patient and physician is the risk involved. The use of a potentially dangerous drug is obviously discouraged if an equally effective, nontoxic alternative is available." On the other hand, Jackson and Oakley[20] report no instance of jaundice in their series and state that the total incidence of jaundice in patients receiving chlorpropamide therapy in the U.K. is 0·02 per cent.

Shelvin *et al*[21] have treated 176 patients with mild, relatively stable maturity onset diabetics with chlorpropamide and observed over a long period. In their hands, a single daily dose of 200 to 800 mg. resulted in satisfactory clinical control in 82 per cent of the total group. In less than half of these, i.e., in 38 per cent of the total series, clinical control was accompanied by normoglycaemia. They found that doses above 500 mg. daily sometimes caused abdominal distress or symptomatic hypoglycaemia (rare with sulphonylureas including chlorpropamide as compared to insulin) and were necessary in only 6 patients, that the optimal dose was 200 to 500 mg. daily, that previous insulin requirement was directly related to therapeutic success (most failures occurring in patients previously needing more than 30 units of insulin) and that the serum chlorpropamide levels fluctuated widely at a given dosage. Their experience has been that a minimal level of 80 mg. per ml. was necessary for a blood-sugar lowering effect, but above this value the serum level and clinical success were not correlated. They have reported side-effects in 6·2 per cent of the series which, however, disappeared rapidly when medication was stopped. These side-effects consisted mainly of skin eruptions, pruritus and gastrointestinal symptoms. Two patients showed abnormal liver function, one of whom also showed pathological changes on liver biopsy ; neither was jaundiced. The occurrence of side-effects showed no relation to serum chlorpropamide level or duration of treatment. In their series there were no disturbances of the haemopoietic system and these have been rare in the hands of other workers also, but the hepatotoxic effect is not insignificant and not so rare[22]. Pre-existent liver damage seems to predispose to it and should therefore be looked upon as a contraindication for administration of chlorpropamide.

The matter is still *sub judice*. Chlorpropamide is undoubtedly a most effective and useful hypoglycaemic agent. Its administration in a single daily dose is a great advantage, but it cannot yet be said to be as non-toxic as tolbutamide. The proper place and the mode of action of the hypoglycaemic sulphonylureas remains uncertain. Combined treatment with sulphonylureas and insulin has been recommended in certain type of diabetics. This deserves further consideration. If a definite proof is forthcoming that the sulphonylureas have a regenerative effect upon the beta cells then they have a specific function and indication and would supplement the action of insulin[17].

A. CHAND

[18] Council of Drugs, A.M.A.—*J.A.M.A.*, **172** : 107, 1960.
[19] POPPER, H. AND SCHAFFNER, F.—*Ann. Int. Med.*, **51** : 1230, 1959.
[20] JACKSON, D. AND OAKLEY, W. G.—*Lancet*, **2** : 752, 1959.
[21] SHELVIN, E. L., ZAROWITZ, H., WEISENSELD, S. AND GOLDNER, M. G.—*Metabolism*, **9** : 570, 1960.
[22] HAMFF, L. H. *et al*—*Ann. N. Y. Acad. Sci.*, **74** : 820, 1959.

Fig. 2—Lateral angiogram showing ventral and lateral displacement of the carotid siphon and its unfolding.

Fig. 3—Lateral ventriculo-encephalogram showing a soft tissue mass emerging from the sella turcica, contrasted by the air shadow.

Fig. 5—Lateral skiagram of the skull showing sellar enlargement.

Fig. 7—Lateral skiagram of the skull showing sellar enlargement.

BAGCHI—*Adenomas of the Pituitary Gland (p. 439)*

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Fig. 9—Anteroposterior angiogram showing deviation of the left anterior cerebral artery by a suprasellar lesion.

BAGCHI—*Adenomas of the Pituitary Gland* (*p. 439*)

Fig. 1—Plain skiagram showing a foreign body (electric cable) in the urinary bladder.

Fig. 2—Electric cable, 13″ long.

PRAKASH *et al—Foreign Body in the Male Urinary Bladder* (*p. 469*)

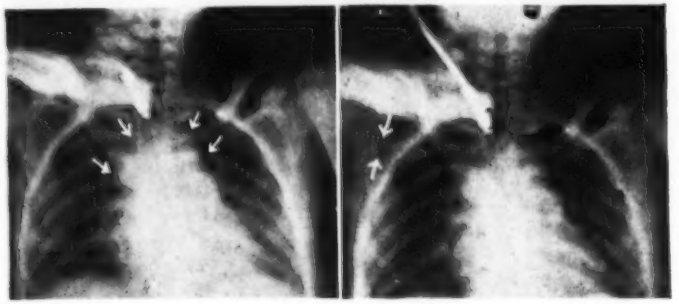

Fig. 1—Showing opacification of the aortic arch. Fig. 2—Aortography showing dye in the arch of the aorta and artery in the right axilla. No dye visible in the carotid arteries.

PRABHU *et al—Pulseless Disease* (*p. 470*)

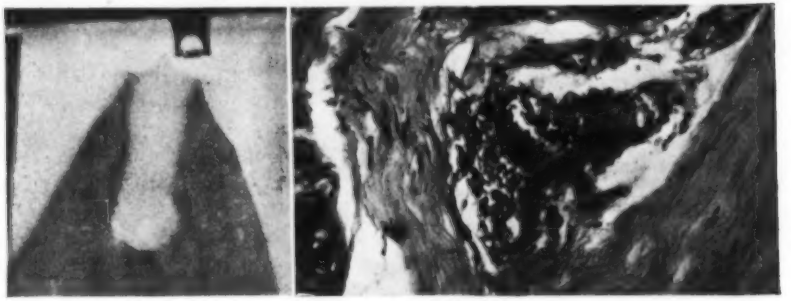

Fig. 1—A soft tissue skiagram of the penis (Case 1) showing slight curvature but no calcification. Fig. 2—Microsection of one of the nodules (Case 1) showing evidence of chronic inflammation, and areas of calcification.

SINGHAI AND KANWAR—*Peyronie's Disease* (*p. 472*)

GENERAL PRACTICE DIGEST

MEDICAL TREATMENT OF PEPTIC ULCER

The medical treatment of peptic ulcer involves treatment of both gastric and duodenal ulcers.

Gastric Ulcers

Rest in bed is important and should be maintained until the ulcer appears to be healed. The diet should be simple, soft and adequate. Milk should be drunk between meals. Milk has good buffering action on gastric acidity.

Drugs are relatively unimportant. An antacid is usually given after the principal meals, and this should be given with high doses of ascorbic acid. A mild sedative such as amylobarbitone sodium, 30 to 60 mg. (½ to 1 gr.) thrice daily, should be given during the day. Sound sleep at night must be ensured. Smoking should be given up.

A gastric ulcer usually requires from three weeks to three months or more for healing. During this period bed rest should be maintained. If available, a gastroscopic examination should be made every 3 to 4 weeks. Otherwise, radiological evidence of healing is necessary.

The amount of scarring left by a healing ulcer is important in prognosis. Some ulcers heal rapidly without leaving any trace whatever, others are slow to heal and leave gross and obvious scarring. These scars are weak points in gastric mucosa and produce relapse. Gastric ulcers of short duration are first treated medically. Gastric ulcers requiring more than 8 weeks to heal, are best treated surgically—especially after a relapse. Some gastric ulcers will not heal under medical treatment. Cases in which ulcer pain persists after 3 weeks' treatment in bed should be advised surgery.

Partial gastrectomy is the treatment of choice in relapse after a full course of medical treatment. Old patients may, however, be bad surgical risks.

Gastric Ulcer and Gastric Cancer

Malignant degeneration of a simple gastric ulcer is very rare. But carcinoma may develop in the remains of the stomach after partial gastrectomy for gastric ulcer. It is difficult to differentiate by x-ray which ulcer crater is benign and which is malignant. In doubtful cases, gastroscopy is helpful. When malignancy is still suspected, it is better to advise a three-weeks trial of strict medical treatment, with further assessment of symptoms, weight, x-rays and gastroscopy at the end of this period. For the malignant ulcer will not improve. A benign ulcer which is not definitely healing should be treated surgically without any further delay. These 3 weeks cannot have worsened in the carcinoma.

Duodenal Ulcer

These ulcers have a strong tendency to become chronic and relapsing. Medical treatment does not influence the natural course of the disease, but such treatment relieves the discomfort of most relapses.

Many cases run a relatively benign course for a limited period, finally healing and not recurring; others become progressively severe with frequent complications and eventually becomes unhealable.

Early duodenal ulcers can be healed. In these cases medical treatment can be of the greatest hope of success.

In duodenal ulcers of more than seven years' duration, medical treatment is palliative and symptomatic, and should be applied in relapses. In some patients relapses gradually worsen and become more disabling. Here permanent relief is offered by modern surgery, if not further delayed. Only suitable cases should be selected for gastrectomy.

Ulcer Diets

During relapse when symptoms are severe, the patient should take a light diet with plenty of milk. During remissions, the patient can and should eat practically anything he likes. Doctors should not allow food fadism and hypochondriasis about food developing in ulcer patients.

Treatment of Relapses

In brief ulcer relapses when pain and discomfort are not severe, bed treatment is advised. It is an axiom to state that a duodenal ulcer should not be allowed to interfere with life more than is necessary. Ambulant treatment in minor relapses consists of increasing the frequency of milk feeds between the meals and by the 2-hourly administration of an insoluable antacid ('gelusil'). Alternately, 'nulacin' tablets may be sucked continuously between meals. Temporary mild sedation with amylobarbitone sodium or phenobarbitone is helpful. Any psychological stress, if detected by conversation with the patient, should be dealt with. Fatigue should be relieved and early bed and week-end rest enjoined.

In severe relapses, bed rest in hospital is advised. Pain and discomfort are relieved by very light diet with 6 oz. (170 ml.) milk feeds 2-hourly between the principal meals and a suitable antacid given 2-hourly alternating with milk feeds. Regular sedation by day and a night sedative are advised. Milk and antacid should be available at bedside for the relief of night pain.

The value of anticholinergic drugs is open to question. In full doses they reduce peristalsis in the body of the stomach to the point of virtual paralysis. But their effect in reducing pyloric spasm is dubious. In the presence of pyloric narrowing or spasm, the greatly diminished activity of the body of the stomach can produce a functional pyloric stenosis.

With severe relapses in hospital it is advisable to give a continuous intragastric milk-drip, using 6 pints (3·5 litres) of milk in 24 hours, and omiting all drugs other than sedatives. A light diet is taken in addition, if desired, and 'gelusil' is kept at the bedside to be taken if and when pain occurs. Within a few days all pains disappear. Now the diet can be increased and milk drip discontinued. The normal hospital diet can now be given excluding only fried food, pickles, curries, etc. The milk feeds and 2-hourly antacids, given be-

tween feeds, are continued until the patient leaves the hospital. The patient should remain in bed except for toilet purposes throughout his stay in hospital and smoking should be discouraged.

With early ulcers, treatment should be continued for 6 weeks to ensure full healing and the best chance for permanent cure.

In established chronic ulcers, the patient should be allowed home as soon as full remission of symptoms has been achieved and has been on more or less normal diet for a week, i.e., in 2 to 3 weeks.

Aftercare

A duodenal ulcer patient in full remission should take a normal diet, excluding only fried foods, pickles, curries, spices. Meals should be taken slowly at regular times. A milk drink midway between the main meals and also last thing at night should be continued indefinitely. During remission the value of antacids is doubtful.

Recent Advances

It has been shown that stilboestrol, 0·5 mg. twice daily, greatly improves the results in duodenal ulcer patients—if the ulcer is of less than 10 years' duration.

Indications for Partial Gastrectomy

Uncomplicated duodenal ulcer of less than 5 years' duration should never be operated on, but medical treatment should be tried.

Regular relapses in ulcers of more than 5 years' duration require surgical treatment.

—From an article by G. D. Hadley, *Practitioner*, **186**: 319, 1961.

CURRENT MEDICAL LITERATURE

Diuretics

The observations that the sulphonamides were potentially diuretic eventually led to the production of potent diuretics such as the chlorothiazides. Their widespread use in the past two years or so has underlined their value in the management of oedema and has also enhanced our understanding of kidney function. These advances in knowledge have been assembled in a special issue of Chemotherapia in honour of the recent Basle International Congress of Internal Medicine at which oedema was discussed.

The benzothiadiazine group of diuretics probably affects sodium excretion in the proximal tubule and potassium excretion in the distal tubule, and some support for this is afforded by the studies of Darmady and of Grant *et al*, on the selective localisation of radioactive hydrochlorothiazide in these areas. The mechanism of tubular interference is ill-understood, but the effect on sodium and potassium excretion determines their main advantage and disadvantage. To displace the prototype, new diuretics acting in this manner should be expected to cause increased sodium excretion with diminished potassium excretion. Thus far, none of the growing family of chlorothiazide analogues has a significant advantage; instead, commercial competition has led to such small refinements as the incorporation of potassium; but the dose of potassium chosen by the pharmaceutical company may be too small. When long-term diuretic therapy is necessary, and particularly when the underlying cause of oedema is hepatic cirrhosis, adequate oral potassium supplements are essential. This is effectively and palatably administered in an effervescent tablet containing potassium bicarbonate, potassium acid tartrate, and anhydrous citric acid, as devised by Hadgraft at the Royal Free Hospital. Each tablet contains about 6·5 mEq. of potassium and is equivalent to 0·5 g. of potassium chloride; a dose of 8 tablets daily is recommended for cirrhotic patients on a low-sodium diet. Hypokalaemia is but one of the undesirable consequences of effective diuretic therapy; others include hypochloraemic alkalosis, low serum-electrolytes, hyperuricaemia, hyperglycaemia, and rashes and thrombocytopenia. The development of hyperglycaemia and glycosuria due to these sulphonamide-type diuretics is somewhat unexpected since another family of sulphonamides has precisely the opposite effect. Goldner *et al* have shown that this complication is restricted to diabetics and prediabetics.

When oedema is associated with hyperaldosteronism, administration of the aldosterone-antagonising steroid, spironolactone, has a potent diuretic effect by acting on the distal tubule. The use of spironolactone together with chlorothiazide has proved a synergistic combination in cirrhotic patients with ascites resistant to either diuretic alone. Shaldon has reviewed his experience of the management of fluid retention in 51 cirrhotic patients in the past eighteen months, in which spironolactone has been available for clinical trial. 33 (65 per cent) patients responded to a low-sodium diet and either a mercurial or chlorothiazide-type diuretic, and 18 (35 per cent) also needed spironolactone. Only 4 (8 per cent) patients had no satisfactory diuresis, and these subsequently died of liver failure. His recommended diuretic regimen for patients with hepatic cirrhosis is initially rigid dietary salt restriction and bed rest; if this is insufficient one of the chlorothiazides and potassium are given. If thiazide therapy has not produced satisfactory diuresis in a week, spironolactone is added and potassium supplements are reduced. Satisfactory diuresis usually starts within three days and continues at a slow steady rate. Uninterrupted combined diuretic therapy may be necessary for some months to eliminate ascites, and thereafter it is continued indefinitely. Finally, if the patient fails to respond to this combination, it may be worth administering an osmotic diuretic—intravenous mannitol—in an effort to initiate diuresis. The careful planned regimen has virtually eliminated resistant ascites, repeated abdominal paracenteses, and the use of Southey's tubes; but close supervision is imperative if electrolyte disturbances and hepatic coma are to be avoided.

Since the choice of diuretic was last discussed in these columns, spironolactone, which then appeared pro-

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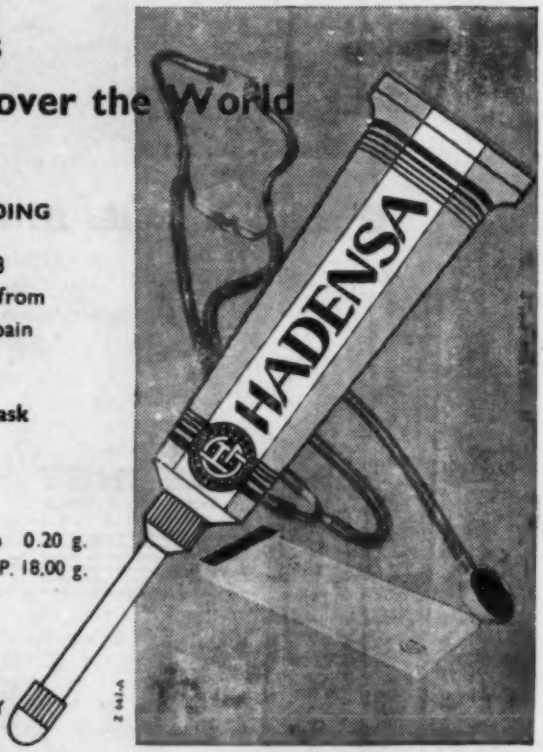

mising, has become freely available and its value has been firmly established. Its widespread and indiscriminate use may, however, lead to some disappointing results and to criticism of its lack of efficacy in certain oedematous states. This can be expected if aldosterone antagonists are administered where oedema is principally due to factors other than hyperaldosteronism. Some patients with congestive cardiac failure, for instance, do not secrete aldsterone in excess; and it has been suggested that urinary aldosterone levels are normal in "left-sided" heart failure whereas they are elevated in "right-sided" heart-failure. Spironolactone will be used more rationally when a technique has been devised for detecting more readily cases with hyperaldosteronism.

To this means of peripheral blockade of aldosterone are now being added central inhibitors of aldosterone secretion. One such substance—methbipyrapone or US4885—selectively inhibits the 11b-hydroxylation of steroids in the adrenal cortex, and so reduces secretion of the three main corticoids—aldosterone, corticosterone, and cortisol. Liddle observed no significant differences between this central inhibitor of aldosterone secretion and a peripherally acting spirolactone in the urinary output of sodium and potassium in a healthy subject maintained on a constant high-sodium diet and prednisolone. On p. 1330 of this issue, Dr. Shaldon and Miss McLaren report their preliminary observations of the use of the hydrochloride of methbipyrapone—metopirone (Su-8874)—also a central inhibitor of aldosterone secretion, in 2 cirrhotic patients. Both had longstanding ascites which had proved resistant to various conventional treatments. Metopirone alone caused slightly increased urinary sodium levels in 1 but not in the other; and the clinical state of both patients remained unchanged. The addition of chlorothiazide promoted diuresis, indicating that it behaves synergistically with metopirone (a central inhibitor) as well as with spironolactone (a peripheral antagonist of aldosterone). On theoretical grounds, it could be predicted that spironolactone would be ineffective if aldosterone production were being blocked by metopirone, and Shaldon and McLaren do not explain why they used this seemingly incompatible mixture. Nonetheless, spironolactone was added to the combination of metopirone and chlorothiazide with quite dramatic and unexpected potentiation of sodium diuresis. But perhaps even more important are the theoretical implications of these findings. The 11-desoxycorticoid precursor of aldosterone has not yet been isolated, but if it accumulates as a result of metopirone blockade, then possibly it is antagonised by spironolactone. Although some of its properties can be surmised according to this hypothesis, the next essential step is to endeavour to isolate it.—Annotation, *Lancet*, **2**: 1353, 1960.

Fever in Malignant Neoplastic Disease

BOGGS, D. R., FREI, E. AND ZIERDT, C. H. (*Ann. Int. Med.*, **53**: 754, 1960) from the Chemotherapy Service, General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland, give in the following lines the summary of their observations on a controlled study of tetracycline therapy in fever in malignant neoplastic disease:

Such fever was not favourably influenced by tetracycline therapy.

Infection developed during the period of therapy in 21 per cent of patients receiving tetracycline and in 15 per cent of those receiving a placebo.

The infections that developed on tetracycline were more severe, and one was fatal.

The bacterial flora of patients receiving tetracycline was altered unfavourably.

A trial of antibiotic therapy is not recommended in patients with fever without demonstrable infection.

Herpes Zoster in Haematologic Neoplasias

SHANBROM, E., MILLER, S. AND HAAR, H. (*Ann. Int. Med.*, **53**: 523, 1960) from the City of Hope Medical Centre, Duarte, California, and Orange County General Hospital, Orange, California, in reporting on some unusual manifestations of herpes zoster in haematologic neoplasias observe:

The literature concerning the association of herpes zoster and malignant disease has been briefly reviewed. Twenty-four additional cases of herpes zoster associated with leukaemias and lymphomas are reported. Salient clinical findings are discussed and certain unusual manifestations are emphasised, notably the development of Ramsay-Hunt syndrome in a case of lymphosarcoma. The various theories concerning the pathogenesis of herpes zoster secondary to other disease processes are presented, and the role of defective immune mechanisms is emphasised. Treatment with radiation, alkylating agents and corticosteroids preceded the development of herpes zoster in 20 of the cases reported, and it is suggested that these agents may increase susceptibility to herpes zoster.

Alleviation of Intractable Pain

GAVIN, R. (*Brit. M. J.*, **2**: 1917, 1960) from the South Sommerset Group of Hospitals writes:

The treatment of severe chronic pain merits a new appraisal in the light of recent developments in analgesic drugs and methods of achieving selective action on nerve roots by subarachnoid injections.

The complexity of factors influencing appreciation of pain must be accepted by workers in this field.

The use of morphine might well be delayed or even relegated to the terminal stages of pain in malignant disease.

In the severe pain of primary or secondary cancer, subdural phenol in 5 per cent concentration in lipoid solvents has proved a relatively safe, and sometimes remarkably efficient, therapeutic agent, especially in pelvic and lower-limb growths. The experience gained by anaesthetists of the gravitational control of solutions injected below the arachnoid can be utilised to advantage in this form of therapy.

Life is almost certainly prolonged where the pain of malignant disease is adequately controlled, and this must inevitably rob cancer of much of the dread associated with it.

Pain-relief clinics, successfully operating in some centres, are essential for the early and complete treatment of severe pain.

Nitrogen Mustard and Steroid in Bronchogenic Carcinoma

WOLF, J., SPEAR, P., YESNER, R. AND PANTO, M. B. (*Am. J. Med.*, **29** : 1008, 1960) from the Veterans Administration Hospital, Bronx, New York, write :

Four hundred ninety-six patients with bronchogenic carcinoma were divided into comparable groups and each treated for three months with nitrogen mustard, diethylstilboestrol, testosterone propionate, cortisone, progesterone or an inert compound (lactose).

Sixty-three per cent of the patients given nitrogen mustard were alive at the end of ninety days as compared to 51 per cent of the patients receiving the inert compound and 37 per cent of patients treated with cortisone. The first course of nitrogen mustard improved the survival rate at the thirtieth day only. The second course of the drug failed to exert any further effect on survival.

Mortality in the group treated with cortisone was highest during the second month of treatment. No explanation could be found for the apparent deleterious effects of cortisone.

The median survival time for the control group was ninety-three days as compared to 121 days for the group receiving nitrogen mustard and fifty-six days for the patients given cortisone. The estimated mean survival time also confirmed the very slight advantage of nitrogen mustard as compared to the inert compound as well as demonstrating the accelerated death rate among the patients given cortisone.

The results with the other drugs were intermediate between those with the inert compound and cortisone, the experience in the group receiving progesterone being almost as bad as that in the group given cortisone.

Thirteen patients died of exsanguinating haemorrhage; six had received diethylstilboesterol and five had keratinising squamous carcinoma as compared to an over-all incidence of 6 per cent of this type of bronchogenic carcinoma in this series.

Chemotherapy of Adrenocortical Cancer with o,p DDD

BERGENSTAL, D. M., HERTZ, R., LIPSETT, M. B. AND MOV, R. H. (*Ann. Int. Med.*, **53** : 672, 1960) from the U. S. Public Health Service, National Cancer Institute, Endocrinology Branch, Bethesda, Maryland, write :

Ortho, para prime DDD was given to 18 patients with metastatic adrenocortical carcinoma, resulting in objectibe regression of metastases in seven patients, significant steroid suppression in seven additional patients, and no apparent effectt in four. The average course of treatment has consisted of from 8 to 10 g. of o,p DDD by mouth for from four to eight weeks.

There was no evidence of toxicity to liver, kidneys or bone marrow. All patients experienced significant anorexia and nausea, and some showed central nervous depression varying from mild lethargy to somnolence. These toxic effects were reversible.

Evidence was obtained that high doses of o,p DDD caused histologic damage and functional impairment of the normal adrenal gland.

CURRENT TOPIC

TREATMENT OF POLIO

A seminar on poliomyelitis was conducted by the branch of the Indian Medical Association at Vijayawada on 26-3-61, Dr. D. J. Reddy, Principal, Guntur Medical College, acted as the moderator.

Dr. Gharpure of Bombay said that polio was a highly contagious disease and a seasonal one too. Generally, rainy season was the time for it. The present phase of polio in Andhra was unusual since the epidemic broke out in summer. Surveys carried out by his unit had been valuable. He said usually 33 per cent of the child population excreted polio virus. Taking all entero viruses into account, every child during its first three years of life picked up an entero virus or even polio virus. The incidence of paralytic polio was extremely low compared to the large number of people exposed to the infection. The proportion of the population actually infected was one to ten thousand of all ages or one to thousand of the child age groups of zero to ten years. Of the paralysed, many would recover partially or totally due to the care bestowed by doctors. Not more than ten per cent of the paralytic cases were total in nature. In Andhra, deaths were fewer still according to his information only 7 in 200 attacks. Dr. Gharpure said that there was no cure for polio virus infection. They should only take care to rehabilitate the child.

Dr. B. Ramachandran, Professor of Social and Preventive Medicine, speaking on Epidemiology said that the route of infection was entirely oral. Pharyngeal secretions contained these viruses which were excreted in the motions. The disease was transmitted by close human contact. The focus of infection was both of known and unknown types. The unknown types were sub-clinical and, therefore, would not produce any symptoms. For every known clinical case, it was found that there were 100 unrecognised cases. The incidence was about 7 to 37 per hundred thousand cases. Milk was considered another common source of infection.

Dr. Y. R. Reddy, Professor of Paediatrics, Medical College, Guntur, speaking on the Clinical Symptoms and Management said that diagnosis of poliomyelitis was quite easy, but the diagnosis of non-paralytic case would create many baffling problems. In this particular epidemic, he noticed that paralysis was mainly restricted to the lower limbs and muscles of the neck. The treatment of this disease was more important on account of certain don'ts rather than do's. While isolation, notification, and surveillance were important in this as in any other epidemic they should not meddle with the patient and should never give any irritative treatment, including injections. Chemotherapy was only advised in the case of secondary infections of lung like pneumonia. The important aspects of treatment include bed rest, avoiding of drugs and symptomatic treatment to relieve pain and other complaints. Moist heat would give relief from pain in this disease.

Dr. B. Ramanarayanamurthy speaking on Bacteriology said that the virus of polio was very small in size

and could withstand wide pH ranges and was not affected by antibiotics. It was sensitive to drying and to ultra-violet rays.

Dr. A. Balasubramanyam of the Pasteur Institute of Coonoor, spoke on Immunisation and Prevention. He said that as a result of 12 years of research on poliomyelitis at their Institute, they were able to assess the severity of the disease as well as its epidemic pattern. It was known that the disease was one affecting the children. He said that they were in a position to diagnose and give all the necessary help if the following items were sent to them, namely throat swab, nose swab, and sample stool for isolation of the virus. There were two types of vaccine available for immunisation. Immunisation of adults was unnecessary. He hoped that in the near future, oral vaccine would be manufactured in sufficient quantities to meet the country's needs.

Dr. C. Vyaghreswarudu, Professor of Orthopaedics, Andhra Medical College Visakhapatnam, stressed on the importance of recognising the acute stage and convalescing stage of the disease. He stated that cases of respiratory paralysis could also be treated well with hot packing which could be done without the aid of the iron lung. He was also of the opinion that Vitamin B injections could be given in spite of contrary opinion by many others. Prevention of deformities could be possible by various orthopaedic appliances such as sand bag, splints, etc. He also referred to the treatment by the method of transplantation of muscles and placental implantation.

Dr. K. Raghavendrarao, District Medical Officer, Railway, Vijayawada, spoke on Surgical Aspects of Polio.

NOTES AND NEWS

Half a Million Dollars for Family Planning

India and Pakistan will each receive more than half a million dollars from the Ford Foundation to assist family planning, it was announced on 11-4-61.

The foundation said it was giving India 603,000 dollars to help research and education in family planning, and 549,000 dollars to the Government of Pakistan for research and training assistance in the establishment of a National Institute of Family Planning.

Both grants were requested by the two Governments. The grant to India supplements one of 330,000 dollars made in 1959.

"No Consultation Day" in Japan

On February 19, 1961, the Japan Medical Association and the Japan Dental Association sponsored a "No Consultation Day" in order to direct attention of the population to the fact that in spite of a Four Point Plan submitted by the Japan Medical Association to the Ministry of Welfare, the Ministry continued to ignore the needs and recommendations of the doctors of Japan.

Under the Japan health insurance plan the medical fee is recognised to be the lowest in the world. For example, a surgeon receives $9.00 (U.S.A.) for a cataract operation. Hence the Japan Medical Association had requested the Welfare Ministry to release medical care under health insurance from restrictions; to increase the medical fee at least 30 per cent; to decrease the annoying business routines associated with health insurance; to simplify the medical fee system by abolishing the current dual system and providing for differential fees according to area.

However the Japan Medical Association is ready to effect "No Consultation Days" and to withdraw from the health insurance plan in the event the government fails to give prompt and just consideration to the problems of the Japanese doctors.

Atomic Fallouts Much Below Danger Level

Prof. Shielas Warren, President of the United Nations committee on atomic radiation and member of the international Atomic Energy Commission, said at New Delhi on 9-4-61 that radiation from atomic tests, as carried out under peace time conditions, held out no danger to living beings.

Prof. Warren was speaking on the relationship between atomic radiation and cancer under the auspices of the Lady Hardinge Medical College.

To emphasise the comparative harmlessness of the radiation resulting from atomic tests, Prof. Warren said it was much less than the amount of radiation which could be ordinarily expected from masonry walls of residential buildings.

Earlier, Prof. Warren showed slides explaining the harmful as well as curative effects of radiation on cancer. The susceptibility of living creatures to cancer resulting from radiation differed according to the creature and extent of exposure, he said.

Malaria Remains Major Worry

New and *disturbing* outbreaks of venereal diseases in several countries were reported by a team of United Nations medical experts on 2-4-61. The group, which recently conducted a study of world health problems, said these diseases had occurred since the advent of penicillin, the use of which had been considerably reducing the incidence of venereal disease.

The group reported that malaria remained the major health problem in tropical areas, and that malarial mosquitoes were developing resistance to insecticides with *unpleasant frequency*.

Continuing progress had been made against poliomyelitis, particularly in the economically developed countries, the team observed. Much of this had been achieved through the use of oral vaccines.

Smoking and Cancer

A New York scientist said at Atlantic City on 9-4-61 that cigarette smoke may contain a wax-like chemical that acts to block the cancer-causing process in human beings.

Dr. Ernest L. Wynder of the Sloon-Kettering Institute said that cigarette smoke also contains two other substances, one that acts to cause cancer and another without whose *promotio*, the first chemical cannot cause the disease. In a report read at the annual meeting

of the American Association for Cancer Research, Dr. Wynder said that the cancer-causing chemicals in cigarettes are known as carcinogens. These chemicals, he said are stimulated into deadly action by a second group of chemicals known as promoters. Without these, he said, the carcinogens cannot cause cancer. The third group he labelled anti-carcinogens and said they act to block the cancer-causing process.

He outlined a five-point programme to eliminate the cancer danger. The programme is more effective filtration of cigarettes, selective filtration of the promoters in smoke, selection of tobacco containing less of the two harmful chemicals, use of methods to cause more complete burning of tobacco to eliminate the harmful effects and adding anti-carcinogenic chemicals.

Benzyl Chloride Process Improved

An improved process for preparing benzyl chloride has been developed at the Regional Research Laboratory, Hyderabad, as a result of which higher yields of pure benzyl chloride have been obtained. Benzyl chloride is an important intermediate for a variety of chemicals which find extensive application in the pharmaceutical, textile, chemical, dye and perfumery industries. It is estimated that the total capital outlay for a plant with a capacity of 600 kg. per day will be about Rs. 5·25 lakhs.

Fighting Tuberculosis

Opening the new building of the Bengal Tuberculosis Association on Calcutta Improvement Trust Road, Entally, on 16-4-61, Dr. Radhakrishnan remarked that the disease could be eradicated by raising the living standards of the people. It was for the Central and State Governments to take measures to improve living conditions and successfully fight the disease.

Voluntary organisations like the Association could, in the meantime, render valuable service. He believed that as many European countries had eradicated the disease, India could also do so.

Poverty, unemployment and malnutrition, Dr. Radhakrishnan said, were the breeding grounds of tuberculosis, which was rampant in this country. The Government was trying to improve living conditions by successive five-year plans. He did not think that disease was a logical consequence of industrialisation. If proper houses were built for workers and they were provided with modern amenities of life, tuberculosis would be eradicated. Malnutrition among workers was mainly responsible for the spread of the disease.

Sir D. N. Mitra in his presidential address said that tuberculosis was a chronic malady in this overcrowded city. Underfeeding and undernourishment, coupled with insanitary living conditions and lack of employment, had aggravated the already unbearable problem.

Shri B. R. Khandelwal announced that the Association would soon start a children's chest clinic. Dr. K. N. De, Secretary, said that 30 chest clinics functioned under the supervision of the Association. Of these clinics four were run by the Government, four by Calcutta Corporation and 22 by voluntary organisations.

E.S.I. Hospital at Kamarhatty (West Bengal)

The Chief Minister of West Bengal, Dr. B. C. Roy, laid the foundation stone of the first employees' state insurance hospital at Kamarhatty, about eight miles from Calcutta, on 16-4-61.

This is the first of the 12 hospitals with a total bed of 2,850, which the Government has decided to establish on both sides of the river Hooghly, exclusively for the benefit of industrial workers and the members of their families. In Calcutta and Howrah the total number of workers covered by the Employees State Insurance Scheme is 2·7 lakhs. Pending the construction of hospital beds for workers, arrangements have been made for the indoor treatment by reservation of 246 general beds and 135 T.B. beds in the Government and private hospitals.

1,000-Bed Hospital for Kalyani

The foundation of an ambitious project of the West Bengal Government to establish a thousand-bed general hospital was laid by Chief Minister Dr. Roy at Kalyani on 31-3-61.

At present, there will be a 500-bed hospital with an annexe of 250 beds exclusively for workers, covered by the Employees State Insurance Scheme. The hospital, estimated to cost about Rs. 77·46 lakhs, would relieve congestion in Calcutta hospitals and contribute towards the general development of the area, Dr. Roy hoped.

Freeze Dry Vaccine

Two centres for the manufacture of freeze dry vaccine which will be useful for use in hill areas are being established in the country in collaboration with the World Health Organisation, said the Union Health Minister, one at the State Vaccine Institute, Patwadnagar (UP) and the other at the King institute, Guindy (Madras).

Health Intelligence Bureau

A Central Bureau of Health Intelligence will be set up in the Directorate General of Health Services, said Mr. Karmarkar. The bureau would co-ordinate work relating to the collation, evaluation and dissemination of health statistics.

Supplementary Food

Programmes for the development of subsidiary, supplementary and diversified foods, have been drawn up by the Government of India. These include multipurpose foods, enriched wheat flour, parboiling of rice by improved techniques, macaroni products, vegetable milk and milk powder, extraction of proteins from green vegetation and food polytechnics.

Preliminary work is in some progress in respect of some of these projects. For example, measures for encouraging the production of multipurpose food on a large scale and for the setting up of demonstration units in each State are being considered.

Suitable programmes for the introduction of improved techniques for parboiling of paddy in the rice-growing

areas are also being drawn up in consultation with the State Governments. The programmes for the production and popularisation of enriched wheat atta prepared from a blend of wheat atta and groundnut flour are being completed.

It is also learnt that the two units for the production of edible groundnut flour each with a capacity of 10 tons per day that are being set up at Bombay and in Madras will go into production this year.

Eight more similar units may be set up during the Third Plan period in the light of experience.

Scheme for Mass Chest Survey of Students

A scheme for conducting mass chest survey along with the examination of general health of the students of Calcutta University including those of the affiliated colleges in the city was launched by the Board of Health of the University on 17-4-61. Under the scheme, students of different colleges would be taken to the Science College on Acharya P. C. Ray Road where a mass miniature radiography unit is located, in batches, in the conveyances arranged by the University. Each student will be examined by four doctors, one after another and then to be placed before a radiologist for x-ray examination, if necessary.

On 17-4-61 the first batch of students were taken to the centre from Surendranath College and examined by the doctors concerned. It is estimated that there are about 75,000 students in Calcutta colleges.

Experts Differ in Legalising Abortions

Experts differed on the need for legalised abortions and forced sterilisation at a sitting of the Punjab Red Cross workers' conference held on 18-4-61.

Dr. G. M. Phadke, Honorary Director, Family Welfare Bureau of the Family Planning Association of India, felt that legalisation be considered in all seriousness. But Col. B. L. Raina, Director of Family Planning, Government of India, was opposed to it. He cited the case of Japan where increase in abortions had caused several complications. The country was having second thoughts on the subject. But both Col. Raina and Dr. Phadke agreed that, in the present mood of the people, there was little chance for a legislative sanction through Parliament.

Some speakers favoured forced sterilisation of lepers and mentally deficient people. This, too, was opposed by Col. Raina, who feared that it would encourage a tendency to hide the ailments.

Dr. Phadke urged that the technique of vasectomy be developed. The Punjab Government, according to an official release, proposes to set up two mobile family planning clinics this year, with headquarters at Ambala and Jullundur. These will provide on-the-spot facilities for vasectomy operations in rural areas.

Radio Discussion on Tuberculosis

A long-distance radio-link discussion on tuberculosis between members of the Indian medical profession in Bombay and the British Medical Association, London, was held at Bombay on 23-4-1961.

Inaugurating the discussion from London, Mrs. Vijayalakshmi Pandit, Indian High Commissioner said it was an *exciting event* which provided tremendous possibilities and a new approach to the problem of disease in a swiftly changing world.

Initiating the discussion from here, Maharashtra Chief Minister, Y. V. Chavan, said that in this part of the world tuberculosis was not only a medical problem but a socio-economic one also, connected with the conditions of living and food.

The chairman of the Bombay panel, Dr. B. B. Yodh, introduced the other members of his panel to Dr. Lloyd Rusby, chairman of the London panel. The reception was clear throughout the programme except for some confusion at the start when Bombay could not be heard in London.

The following doctors participated in the discussion. *Indian panel*—Dr. B. B. Yodh, Dr. M. D. Deshmukh, Dr. George Coelho, Dr. B. R. Billimoria and Dr. V. D. Arora. *London panel*—Dr. N. Lloyd Rusby, Dr. William D. W. Brooks, Dr. T. Holmes Sellors and Dr. K. M. Citron.

The radio link was organised by Messrs. Smith Kline and French (India) Ltd.

CORRESPONDENCE

The Editor is not responsible for the views expressed by correspondents

Foreign Tour Expenses of a Surgeon
Madras High Court Decision

SIR,—The following extract from *Taxation*, December 1960, Vol. XIII, page 258, will be of interest to members of our association who have to incur expenses on account of study tours in foreign countries.

I am, etc.

Bombay Territorial Branch
Indian Medical Association
Bombay 4

M. A. PANWALA,
Hony. Secretary

"The assessee, a leading surgeon, undertook a tour abroad in 1953 in the course of which he visited a number of hospitals and clinics in U.S.A. and U.K. to study the latest techniques in surgery and treatment. The tour cost him Rs. 10,538/- the whole of which he claimed as a deduction under section 19 (2) (xv) in computing his taxable income. The I.T.O. disallowed the entire expenditure as he took the view that it was of a capital nature incurred by the assessee to secure to him a benefit of an enduring nature. The A.A.C. allowed one half and treated the other half as the personal expenses of the assessee while abroad. The Tribunal also upheld the disallowance of one half as it felt that the amount was capital in nature, as the mental equipment obtained by the tour was of a general and enduring nature and the benefit of such tour was expected to be far-reaching and not mainly confined to a short space. The Madras

High Court* held that the expenditure was not of a capital nature as it was incurred by the surgeon to maintain his efficiency even if it resulted in a mental equipment which enabled him to carry on his profession as surgeon in a better and more scientific way".

Lack of Understanding of Rural Life and Culture in Medical Students

SIR,—Our national leaders advise medical practitioners to go to villages every now and again. I wonder if mere urging them to go to villages will help us at all. After considerable study I have come to the conclusion that there are serious shortcomings in our medical education which are partly responsible for lack of zeal in our medical graduates to serve in places where their services are most urgently required. It is true that the young practitioner of today is better equipped in technical abilities than many of his predecessors. But in his college life no opportunity is given to him to acquire the social and cultural knowledge that may help him to develop an understanding of rural life and culture, assessing the needs of the villagers and how they can best be helped in their fight against disease and disability.

Most of the medical students in India are educated in cities and, therefore, it is natural that they would be attracted to practise in the more lucrative and socially desirable urban setting. Even those who join rural medical service often get frustrated because at this stage they discover that folk beliefs, ideas, customs and practices, etc., are in direct clash with modern medical knowledge. Since they have no social science background they fail to develop respect for this cultural difference and hence prove to be less successful practitioners.

If medical service is to be made available to rural areas then the medical students should be given a background in anthropology to make them aware of social and cultural factors in health and disease and socio-cultural implications of modern meidicine and public health programmes. Medical educators need to re-examine pre-medical educational requirements and the undergraduate medical curricula and assign an *adequate* number of hours to teach medical students the basic science of human behaviour and the *whole man*.

I am, etc.

K. G. Medical College
Lucknow.

KHWAJA ARIF HASAN
Department of Social and Preventive Medicine.

Wastage in Medical Colleges

SIR,—There are at present 60 medical colleges in the country admitting about 6,400 students each year. Also, some of the medical colleges are to be expanded and some more new ones are to be built in order that the needed number of doctors will be available by the end of the III Five-Year Plan period.

There have been reports in the press and elsewhere of "a great wastage" in medical colleges. By "wastage" is meant that some of the persons who join the medical colleges give up their medical studies completely after varying number of years. This Directorate has examined this question and obtained figures from 16 of the older medical colleges. While only 35-40 per cent of the students admitted in the years 1950, 1951, 1952 and 1953 passed in the minimum period of 5 years, giving a failure rate of 60 per cent or so each year, after a further period of 6 months study, some 26-30 per cent more persons passed, i.e., about 60-70 per cent of the students complete the medical course in 5½ years. After another 6 months, i.e., after a total period of study of 6 years a further 25 per cent passed, bringing the total number of persons who qualify to 85-90 per cent of the original number who joined the medical college. Another interesting fact observed is that the percentage of passes after the 6 years period does not increase proportionately to the period, i.e., a high proportion of those who do not qualify in 6 years are not able to complete the course at all. It has been found that by 8 years only about 92-95 per cent have qualified. The number of persons who actually discontinue their study altogether resulting in loss from the point of view of training, was not more than 6-8 per cent. The study has revealed that while the number of persons who qualify in the minimum period is not very high, ultimately in about 7 years the great majority were able to qualify.

The question of further minimising the rate of failures and enabling the candidates who join to pass in the minimum period of time has been exercising the thinking of the authorities concerned. Various suggestions have been put forward as such as (i) to improve the methods of selection, (ii) to improve methods of teaching, (iii) to improve methods of examinations and (iv) to improve methods of assessment.

In this connection, there have been also complaints that many women who join the medical colleges become a loss to the profession. The figures in the Lady Hardinge Medical College, the only college meant exclusively for women students have been examined. They show that a very high percentage—about 75-80 per cent—pass within the minimum period and in 6 years this pass percentage increased to about 92 per cent. The actual number of women who give up their profession entirely appears to be very small.

I am, etc.,

New Delhi.

(DR.) M. J. H. WRITER
Deputy Assistant Director General of Health Services.

REVIEWS

Inactivation of Viruses, *Annals of the New York Academy of Sciences,* Vol. 83, Art. 4, January 13, 1960; Published by the Academy, New York; 9"×6", pp. 513-760; $4·00.

The series of papers is the result of a conference on "The inactivation of viruses" held by the New York

*Dr. P. Vadamalayan, Madurai *v.* C. I. T. Madras: Case Ref. No. 87 of 1956. Decided on 15th September, 1960.

Academy of Sciences in March, 1959. In the past, also, quite a number of such publications on different subjects were made by the Academy after holding such conferences or symposia.

Oscar Wilde said once "Everything is now-a-days settled by the symposium". Although many of the problems are not really completely settled in the symposia, the discussions by a galaxy of world famous investigators, as in the present case, certainly help to guide the trend of thought towards the right direction of settlement.

The publication in question deals with the much complicated subject of virus inactivation, in three parts: (i) Biological inactivation, (ii) Chemical inactivation and (iii) Physical inactivation. The last chapter has been devoted to the problem of reactivation of viruses. In the first part, results of fundamental study of virus-antibody complex, and the inactivating property of some components of normal sera have been presented. In the second part, emphasis has been given to the problems of inactivation by formaldehyde and beta-propio-lactone. In Physical inactivation, the last section, apart from ionising and non-ionising radiations, thermal and other physical means of inactivation have been brought into the picture.

The publication is valuable both from the point of view of practical application of inactivated viruses, as well as fundamental elucidation of the mechanism of virus inactivation by various means, used now-a-days.

J. K. SARKAR

Contributions of the Physical, Biological and Psychological Sciences in Human Disability, *Annals of the New York Academy of Sciences,* September 1958, Vol. 74, Art. 1; 9"×6", pp. 160; published by the New York Academy of Sciences; $3·50.

The horizon of science in every branch is expanding in modern times with newer discoveries, appliances and techniques. An individual scientist therefore requires a broader view and greater knowledge in different spheres to tackle his problems as also interdisciplinary approach and research.

Trauma and its consequent disability in human beings require such co-ordination and interdisciplinary approach by medical, biological, physical and engineering scientists to rehabilitate them. The science of rehabilitation has been aptly described as the 'third dimension' of modern medicine and surgery following preventive and curative medicine and surgery and requires teamwork.

The New York Academy of Sciences, believing in this interdisciplinary approach, organised a conference in which different scientists, particularly the engineering and physical scientists and research workers, discussed this problem. The proceedings of this conference is published in this monograph under review.

In the chapter on amputation, Mauch discusses the application of engineering technology to stimulate human motion while Haber and Litt discuss physiological, psychological and biological aspects of loss of limb. Discussion on phantom limb syndrome by Weiss and Haber is excellent, particularly stump sensibility study and the phenomenon on telescoping and distal phantom. The collaboration and role of the engineer in prosthetic development is stressed by Contini.

Methods of interdisciplinary research in the different spheres of human disability and rehabilitation are discussed by Brigatman, Dabelstein, Lindsay and Work.

In the chapter on neuromuscular dysfunction, much useful information is given on hemiplegic gait by Marks and Hirschberg, objective recording and biomechanics of pathological gaits by Drillis, psychological adjustment patterns by Seidenfeld, co-ordination by Spencer and the role of the physicist by Staros.

The application of engineering techniques to the problems resulting from sensory loss has been neglected for long—particularly in the care of the blind and to solve their reading problem. Frank of the bioengineering section discussed this problem. Psychological research on the physically disabled is stressed by Meyerson while Imus evaluates the role of research in many sensory disorders, particularly with the aid of new electronic devices.

Finally, Laundaner outlines a scheme for care, research and teaching for interdisciplinary approach in human disability.

This informative monograph is recommended to the large body of scientists and medical men entrusted with the care of human disability.

K. S. BOSE

Notes on Leprosy—By Dharmendra, M.B.B.S., D.B. (LOND.); 1960, Ministry of Health, Government of India, obtainable at Central Leprosy Teaching and Research Institute, Chinglepat, Madras; 10½"×8½", pp. vi+206, plates 48; Rs. 8·00.

The author, at present Director of the Central Leprosy Teaching and Research Institute, is a well-known leprologist who had been connected over long years on teaching in and research on leprology. The volume under review has grown round the material used in teaching to D.T.M. and L.T.M. classes and hence do not go much beyond the scope set for these courses. It would have been a pleasure to have a complete text-book on the subject which the author says in his Introduction had been his intention but it had to be kept in abeyance —for the present.

The subject has been dealt with under the following heads: Introduction, Historical, The Present Distribution of Leprosy, Aetiology, Clinical Manifestations, Pathology, Histopathology, Diagnosis, Differential Diagnosis, Classification, Prognosis, Epidemiology, Treatment, Prevention, and Social Services. There are four useful appendixes.

Practically all the plates have been bunched together at the end of the book. This makes reference to text difficult.

The notes have been prepared as a practical handbook for medical personnel engaged in leprosy work and are meant to aid them both during training and in field work. In all this the volume has been eminently successful.

S. P. C.

OBITUARIES

Dr. R. Padmanabhan

Dr. R. Padmanabhan, M.B.B.S., passed away on February 1, 1961, at the Stanley Hospital, Madras, after a short illness. He was 47.

Dr. Padmanabhan was an active member and a former secretary of the Palghat District Branch, I.M.A. He was hony. medical officer, attached to the Government Hospital, Palghat, when he died.

Dr. Rash Behari Ghose

Dr. Rash Behari Ghose died of coronary thrombosis on December 10, 1960 at the age of 52. Dr. Ghose obtained his M.B. degree from the Carmichael Medical College, Calcutta. He started independent practice in the Jalpaiguri town from 1940. He was a member of the Jalpaiguri branch, I.M.A., for a pretty long time and was its vice-president for some years. He was Professor of Biology in the Jalpaiguri A. C. College. His amiable manners and genial temperament endeared him to all.

Dr. Natukar Ghosh

Dr. Natukar Ghosh was born in his native village Kadra, P.S. Garhbeta, District Midnapore on 1-11-21. He passed the Matriculation Examination in 1939 and obtained the L.M.F. diploma from Bankura Sammilani Medical School in 1945.

By sympathetic service he built up a valued practice in the small village and earned the respect of the public. He was a valuable member of the I.M.A., Garhbeta Branch and once invited a rural medical conference in his residence which was attended by Dr. N. Munshi, the then President of the Bengal Provincial Branch, Dr. J. Majumdar, the then Provincial Secretary, Dr. R. C. Adhikary and others from Calcutta and many members of the Garhbeta Branch and the neighbourhood. But he could not withstand the hardship of village practice and fell a prey to chronic dyspepsia, arthritis and allergy. In October 1959 he developed persistent temperature and cough and after months of investigation it was diagnosed as pulmonary carcinoma. He was successfully operated upon in the Calcutta National Medical College Hospital but unfortunately metastasis followed and he succumbed on 14-7-60 leaving behind his old father, wife, a daughter and a son.

Dr. Sailesh Chandra Bhowmick

Dr. Sailesh Chandra Bhowmick originally an inhabitant of Dacca, after passing matriculation examination, entered Dacca Mitford Medical School. He left the school in the 3rd year and joined the non-co-operation movement. He then passed from National Medical Institute, Calcutta, but did not get official recognition till 1928 when he had to appear in an examination for the second time in the school course of the same institution in which he passed obtaining high distinction in many subjects. He came to the district of Jalpaiguri in the year 1926 as a medical officer in a tea estate. In 1948 he was awarded L.M.S. (Nat.) in addition to his former L.M.F. He started independent practice in Jalpaiguri town from 1930 and soon obtained wide reputation. He was the secretary of the Jalpaiguri branch, I.M.A. from 1935 to 1958 and its president in 1959 and 1960. It was mainly due to his efforts and untiring energy that this branch has so much importance today.

He was a Commissioner of Jalpaiguri Municipality, Secretary, Municipal Employees Union, member Managing Committee, Jalpaiguri Zilla School and Jalpaiguri Girls' High School, Vice-president Merchants' Association, Secretary Jalpaiguri Multipurpose Co-operative Society and member, Managing Committee and Secretary, Medical Sub-committee of the local Red Cross Society.

He was loved and highly respected by the people of the town and the district. His loss on the 14th of February 1961 at the age of 61 is mourned by all, specially the members of the Indian Medical Association, Jalpaiguri branch.

Dr. R. B. Ghose

Dr. N. Ghosh

Dr. S. C. Bhowmick

SUPPLEMENT
Journal of the Indian Medical Association

Vol. 36, No. 10 CALCUTTA May 16, 1961

XV MADRAS STATE MEDICAL CONFERENCE, 1961, OOTACAMUND

The 15th Madras State Medical Conference was held at 'Tamilagam' (Arranmore Palace), Ootacamund, Nilgiris district, on April 1, 1961 under the auspices of the Nilgiris Branch of the Indian Medical Association.

The National Flag was hoisted by Mr. O. H. Dias, Collector of Nilgiris and Dr. (Mrs.) C. Mathew, retired District Medical Officer and the immediate past President of the Nilgiris Branch of I.M.A. unfurled the I.M.A. Flag.

Welcome Address

Dr. V. Kuruvilla, the District Medical Officer of Nilgiris, and Chairman of the Reception Committee welcomed the delegates and visitors to the conference. In his address he gave an account of the charms of Nilgiris, the queen of hill stations.

Inaugural Address

The conference was inaugurated by Dr. Sir C. P. Ramaswami Aiyer. In his inaugural address, Dr. C. P. Ramaswami Aiyer stressed the importance of public health and sanitation. Unfortunately, he said, public health did not receive as much attention in India as it ought to have both from the Government and the public. The sanitary condition of most of their towns and villages was anything but satisfactory. It was the duty of the civic bodies to bestow proper attention on this important aspect of public health. Dr. Ramaswami Aiyer also deplored the inadequacy of facilities in the rural parts of India for medical relief and wondered how far the statement made by the Minister for Health, Madras, in the Legislature recently that doctors were at present available even in remote villages was true. He wished that the Minister's statement was true. But felt that it was perhaps intended for the consumption of the legislature.

Presidential Address

Dr. T. V. Sivanandam, the President of the Madras State Branch of I.M.A. then delivered his Address in which he touched upon the existing health problems of the country. He said inter alia,

"The 15th chapter in the history of our State Branch of I.M.A. is being written. We are only 1770 strong now. Serious attempts must be made to enrol more members and to bring in to our folds all those who remain outside. The government has recognised our Association as one with whom they can go for discussions for the solution of several problems that confront them for the good of the community. Hence we must make our association stronger. It will be possible for us, if we all consolidate ourselves under one banner, to achieve our aims to raise the status of our association and medical men in collaboration with the government. Let us not forget the old idiom, 'united we stand, divided we fall'. At this juncture let us remember and pay homage to all the departed men of our profession who participated in the growth of I.M.A.

Medical Men in Service

Oft repeated request of ours to raise the status of medical men in service, was conceded by the government at last. The report of the revised scale of pay of government servants, by the Madras Pay Commission is the first step of our success. The revised scale of pay has come to our near expectation only and not to our entire satisfaction. The disparity of the scale of pay between assistant surgeons and civil surgeons with the identical posts in other departments still exist. When the revised scale of pay is put in execution, we find that the pay drawn by a person with eight years of service, is nearly the same as the raw recruit to the service cadre. This is a glaring mishap we face. This discrepancy has arisen because of the fact that the weightage in the increment was not sanctioned. There are medical officers who are getting special pays sanctioned by the local bodies which was approved by the government long before the Pay Commission Report. Such cases must be looked into and they must be fitted into new scale. We are really thankful to the government for increasing the special allowances and pay to some of the administrative and teaching posts. The non-practising allowances which have to be paid to some of the medical officers at the top level, I am surprised to find, is yet to be disbursed, and for no reason it is being withheld. I do not like to enumerate here all these discrepancies that have arisen after the acceptance of the Pay Commission Report. These discrepancies can be easily and quickly solved, if only the persons responsible to implement the Pay Commission Report view things in the most dispassionate way possible and by giving due weightage to the various Government orders passed, before sanctioning special grade of pay and special allowances to individual cases. May I request the government to solve these defects sympathetically and quickly without unnecessary delay?

On reviewing the tremendous work that was turned out during the last year in the implementation of developmental works in the district, taluk and block levels, one cannot but congratulate the government. Residential quarters to doctors and other staff in several hospitals were built. The bed strength of the important hospitals has been since increased. Every attempt has been made to see that the medical facilities are easily available to the common man. The dearth of medical men to run the hospitals is getting less. Primary health centres are being run with efficiency. I am confident that the new scale of pay given by our Government will attract more doctors to government service.

Rural medical service is as important as urban medical service. What we find in actual practice is that graduates fresh from college are posted to primary health centres and rural dispensaries which are situated in the interior. Fresh graduates are to some extent neither ready to tackle the problems of public health independently, nor they can face the views of the local politicians, nor they can adapt themselves to the rural ways of living. Hence, I would like to urge the government to post trained doctors of some years' standing as selection grade medical officers to the rural areas so as to give more efficient treatment with several years of experience behind them. Doctors who are posted in the rural areas must have had a good training in public

health work as well which is predominantly more essential in the prevention of diseases.

We hear often that doctors are resigning from service inspite of better and adequate emoluments. The frequent transfers from place to place, separation of families for longer duration of the time, unecessary interference in day-to-day administration, the play of political and social influences in the discharge of their duties, want of proper accommodation and other considerations, unwanted, improper and unhealthy and untrue criticism of conduct of the medical men and the influence, favouritism and personalities to keep persons in the same institutions for indefinite periods are all the contributory factors for the resignation of promising young and bright medical men. I appeal to the government to prevent such evil influences.

The District Medical Officers have in the new set up of our government multifarious duties to perform. In addition to their professional work, they have got administrative duties and also have to look into the development works in the district. The D.M.Os. have to attend several meetings every month such as Development Council Meeting, Block Meetings etc., and in addition to all these duties, they have to waste much of their time in enquiries over anonymous letters and complaints on trivial matters which are of very little importance. So much so the D.M.Os. could not do much justice to their professional work, which they wish to do and are capable of doing. Much of their time is being spent on non-professional duties. The government could do well, as they have done by lessening the work of the District Collectors by creating District Revenue Officers, by creating a set of medical men who are at the verge of retirement with a special cadre of pay to look after the administrative and non-professional word of the D.M.Os. This will not only be advantageous to the professional work of the medical men but it will result also in proper developmental work in the various hospitals and dispensaries quickly and thoroughly to the satisfaction of every body.

HONORARY MEDICAL OFFICERS

The district and taluk head-quarters hospitals must have only a skeleton staff of service men. Minimum number of service men must be posted to meet the essential requisites of the hospital. Many of the hony. medical officers in our State have made names by their sincere services to several institutions. At a time when we are short of medical officers, the government must come forward to take advantage of the voluntary services of the hony. medical officers. One of the best ways, as I consider, to give better aid to the rural population is to have only a skeleton staff of service men in the headquarters and fill up all the remaining posts by hony. officers.

I am confident that with proper understanding and application it will be possible for the government to rope in many efficient hon. medical officer to man the various departments in every institution with faith, confidence, sincerity and honesty.

INDIGENOUS MEDICINE

The College of Integrated Medicine has been, once for all, closed. It is really a bold step the government has taken and they deserve our congratulations. The graduates coming out of this college were practising only the allopathic or modern system of medicine and not the indigenous system. They found that this training in the college of Integrated Medicine is a cheap and a short-cut to become doctors practising allopathic system. If only this college were to be in continued existence, definitely and certainly the indigenous system of medicine will be having a gradual death in our country. But I do advocate a separate college with an attached research institute in each of the branches of Ayurveda, Unani and Siddha, and the basic degree in knowledge of modern scientific medicine must be the minimum qualification to study them. Of late, Homoeopathy treatment is in vogue in some places. It would be better only if the training is given by recognised colleges with recognised syllabi and training. I heard that our government is contemplating to start a college for study of Homoeopathic Medicine.

MADRAS MEDICAL COUNCIL

The Madras State Medical Council Act was enacted several years back. In the light of what is happening in our country several provisions of the act have become outmoded and have got to be amended. The government does not seem to be taking any interest in it. May I request the government to enforce the act strictly and amend it to suit the needs of the present day?

THE EMPLOYEES' STATE INSURANCE SCHEME

The Employees' State Insurance Scheme is being enlarged and expanded throughout our country. Inclusion of families and dependants is being implemented. Panel system of rendering medical aid has established a good tradition of satisfactory treatment to both the employee and employer. The fundamental principle of the scheme that the labourer can choose his own doctor, the doctor-patient relationship, economy in the use of drugs, reducing sickness absenteeism and adequate increase of emoluments to medical personnel are lacking in the service system of the ESI scheme. It is very curious and amazing to note how one doctor in the ESI dispensary can look after 3000 to 4000 insured persons, when the panel doctors are not allowed to have more than 1000 insured persons in their list. Except for the fact of reducing the expenses to the Corporation, no better claim can be adduced for embracing service system under the ESI scheme.

It is gratifying to note that a good labour hospital with all the equipments is in progress of construction at Madras. There is a proposal for a similar hospital at Coimbatore at a cost of 27 lakhs of rupees. I would like to request the government to speed up the work and complete the construction at an early date so that the availability of beds in the government head-quarters hospital for the non-labour population will be increased.

FAMILY PLANNING

Family planning has been recognised as one of the ways to solve the socio-economic problems of our country. The surgical approach for the family planning must be taken up only as a last resort. Of late, it has been noticed that the mental set up of the married couples is badly hit in the long run after the surgical treatment. We have yet to make a survey on it. At present family planning seems to be popular in the cities and among the upper middle class people only. To the poor and the village folk also proper progaganda must be done in those quarters mainly. It is just gratifying to note in the recent census operations that the increase in birth rate is only 11 per cent in our state and is the lowest when compared to the increase in other states. The government through their agencies must supply contraceptives at a low price possible, so as to enable all strata of persons to get at them. This will go a long way for effective family planning.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

More attention must be paid to the preventive aspect of disease. Social medicine, psychiatry and congenital malformations are to be made an important study in the curriculum of medical education. We have seen many maladjusted and mentally retarded children, who, without any treatment are being left in the street and become a menace to the society. There are institutions which can make these unfortunates to lead a better

From left : (1) Dr. V. Kuruvilla, The Chairman of the Reception Committee, and Dr. Sir C. P. Ramaswami Aiyer who Inaugurated the Conference. (2) Dr. T. V. Sivanandam, President of the Conference Delivering his Address. (3) Dr. J. Viswanathan, Hony. General Secretary, Proposing the Vote of Thanks. (4) Dr. N. Veeraraghavan, President of the Scientific Sessions Delivering his Address.

life. Such institutions must be opened in our State at several centres and the already existing institutions must be given aid by the government.

Protected water supply in the big cities and good draw-wells instead of step-wells in the villages must be provided. Compulsory under-ground drainage must be insisted upon in cities, and no housing scheme must be sanctioned without providing good protected water supply and underground drainage to their members in the colony. District headquarters must be provided with an uptodate isolation Hospital for the treatment of infectious diseases.

Periodic, regular, medical inspection of school and colleges students must be made. Students of below average health and with a tendency to get diseases must be carefully looked into, noted and given proper treatment. Education of the common man towards the prevention and cure of diseases must be given by visual education, exhibitions and health museums. At every headquarters, the government must spend at least 2 lakhs as capital outlay for establishing health museums similar to the one at Hyderabad. It is impressive, instructive and educative to every body. People can be educated easily through health museums than in any other method. More strenuous methods must be taken to in the eradication of malaria, prevention of spread of tuberculosis and other infectious diseases and to step the spread of leprosy.

DONATIONS TO HOSPITALS

We often see that several philanthropic persons and organisations of various parts of our state have come forward with handsome donations to construct buildings and extensions to our hospitals. It is a good and welcome gesture on the part of our government to readily allot a matching grant for the completion of the buildings in the hospital. The total amount that the government have got to spend for the capital outlay is getting lessened. I request the government to continue the matching grants so as to give enthusiasm and impetus for many more such persons and organisation to come forward to give more donations. But in all these cases the government must try to complete the projects in a short time possible, otherwise the long delays in the execution will naturally affect the considered decision of the donors. The government insists on remitting the donated money into the treasury in the name of the District Medical Officer. The amount remitted into the treasury does not carry any interest. Huge sums are kept without interest. Hence the donors must be allowed to remit the amount donated in the joint name of the D.M.O. and the seniormost hony. medical officer into any scheduled bank or co-operative bank. The interest accrued on the amount will be added to the capital.

MEDICAL EDUCATION

It is being said that the standard of education is falling down. There are several factors which co-exist to bring down the standard. In my view the personality test is very essential. The wholesome merit and the reservation of seats to certain communities should not be the criterion for the selection of students for admission to medical colleges. The personality test and reorganisation of the selection committee in such a way that the members in the committee are medical men are important, and this alone in conjunction with merit and the absence of favouritism, influence and V. I. Ps. considerations will certainly raise the standard of medical education.

Secondly, there is a belief in the ruling circles that the multiplicity of medical colleges in the country will solve the dearth of medical men in service. In my personal view, the multiplicity of medical colleges without adequate financial assistance, without having proper, efficient and experienced professors, without facilities for research and without giving any opportunity for the medical men to undergo post-graduate studies in other advanced countries are contributory causes for the falling standards of medical education, which result in the output of sub-standard medical men.

Thirdly, the status of professors in the clinical and non-clinical subjects must be raised. They must be paid as liberally as possible and they should not be allowed to do any sort of private practice. When his status is not well recognised and paid adequately, the standard of his teaching will naturally decline leading to sub-standard medical educatioin.

Lastly, the internees and house-surgeons must be taught in methodical and practical ways in dealing with the patients. The clinical, biological and biochemical ways of examination must be well known to the internees and house-surgeons. It is at this stage that they must be given the opportunity to practically tackle and solve, diagnose and treat all the cases that come to them boldly, scientifically and successfully and independently. When this aspect is gone through well, there will be neither a falling in standard in education nor be creating any sub-standard medical men.

PHARMACEUTICAL INDUSTRY

The drug industry and the pharmaceutical concerns are important adjuncts to the medical profession. Even after our country has got independence, we are depen

dent on other countries for many important drugs. This naturally raises the cost of medicines which is not in the easy reach of the common man in our country. The Government must have a healthy control over the drug industry in our country. Availability of skilled technicians, liberal foreign exchange and financial assistance to this important industry will certainly go a long way to the manufacture of efficient and efficacious drugs in our country itself. Our pharmaceutical concerns have already patented several good drugs. But the help of the government is necessary. Research institutions must be attached to each concern to test periodically the potency of the manufactured drugs and medicines. When once the important medicines are made in our country, the cost of medicine will be reduced to such an extent that it will be in the easy reach of the common man.

OURSELVES

Our profession is the only profession which requires each and every one of us to be alert all the 24 hours of the day. The professional duties in all other walks of life are limited to a certain number of hours per day only. Medical men have to work during epidemics. The over work, the intense anxiety and extreme worries, the mental fatigue and physical exertion are all contributory factors in the life of a medical man to end in either cerebral or coronary catastrophe.

Hence, the medical service must be listed as an essential service in our country and all the privileges and relaxations of rules to essential services must be given to every medical man. Law of the land must be such as to protect the privileges of the medical men. Rent control to the premises occupied by medical men and protection against eviction by his lanlord must be guaranteed by the government. Shop assistants and establishment act should not in any way affect the professional activities of medical men. Sales tax on dispensed medicine to one's own clients and patients must be removed as the medical men do not dispense for another man's prescription.

Friends: Medical science is an everlasting and advancing science. Let us try to be abreast with the recent advances and researches in the several branches of medicine and surgery and the allied subjects. Let us create a good tradition of bed side manners. Let us do our job to the satisfaction of our conscience without any fear or favour.

We owe our duty to our Indian Medical Association. I.M.A. is the only organisation in our country with the largest number of members in its fold. Our association with the state and central governments with go a long way to solve the very many problems pertaining to public health and medicine. It is my wish that the considered views of the I.M.A. must be received as a gospel decision by the government. Every medical man must feel that he is a part and parcel of I.M.A. and every member should see that he strengthens the association by bringing more medical men under the banner of I.M.A. You must take active interest in the affairs of the association and the prestige of the Association must be kept aloft.

Lastly, we owe our duty to our country and community. We are placed in an advantageous position in the community to develop close acquaintance with several cross sections of people, rich and poor, healthy and sick, fortunate and unfortunate in the society. Let us take this opportunity to serve our community and country. We must feel it our duty to serve in rural areas in some way or other, either by establishing our branch clinic in the rural areas or by going to nearby villages periodically to render medical help to the rural population. Our duty to our community and country is also to see that we co-operate and be one with the government to implement all the public health measures not only in the urban areas but more so in the rural areas.

As we can easily understand men and matters, urban and rural, it will be easy for the medican men to work for the advancement of mutual understanding and mutual tolerance, good will and peace throughout our community and our country. Let us dedicate our life to work for the maximum common good and the common man."

Dr. P. V. Kurian, Deputy Director of Pasteur Institute of Southern India, Coonoor, presented the Souvenir, prepared for the occasion, and Dr. D. S. Chandrasekhar, Research Officer of the Pasteur Institute, read the messages wishing the conference success which included messages from the Governor of Madras, Health Minister of Government of India, Chief Minister of Madras, Speaker of the Madras Legislative Assembly and others. The morning session concluded with the vote of thanks proposed by Dr. J. Viswanathan, the Hony. General Secretary of the conference.

In the afternoon, the scientific session of the conference commenced, which was inaugurated by Dr. S. Krishnamurthy, the Dean of the Agriculture College, Coimbatore, and Additional Director of Agriculture, and presided over by Dr. N. Veeraraghavan, Director of the Pasteur Institute. In his inaugural address, Dr. Krishnamurthy dwelt at length on the close affinity existing between the plant life and human life, and observed that while human beings depended upon the plants, the plant life could exist independent of human aid. He observed that there were great medicinal properties in the plant life which could be usefully exploited for the relief of the ailments of mankind and said that it was upto us to make a thorough research and discover the medical potentialities ever present in various plants and utilise the same for the benefit of the community at large. Later, Dr. P. K. Krishnankutty, Physician, Government General Hospital, Madras addressed the gathering on "Oral Diuretics"; Dr. A. S. Ramakrishnan, Surgeon, Government General Hospital, Madras, on "Benign Thyroid Tumours"; and Dr. K. A. Ramalingam, Surgeon, Erskine Hospital, Madurai, on "Some unusual Bone Tumours". The lectures were illustrated with slides and charts on the projector.

The Annual Meeting of the State Council of the Madras State Branch of I.M.A. was held at 4-30 P.M. The election of Dr. T. V. Sivanandam as the President, and Drs. C. Nathamuni Naidu and V. Samuel as Vice-Presidents was announced. The election of office-bearers of the Madras State Branch was then held, and Dr. M. P. Jesudasen and Dr. S. C. Rajarathnam of Coimbatore were re-elected as the Hony. Secretary and Hony. Treasurer respectively for the year 1960-61 while Dr. A. Pattabi was re-elected as the Hony. Joint Secretary. Drs. T. V. Sivanandam and C. Arumugam of Coimbatore were re-elected as the representatives of the State Branch to the Working Committee of Central I.M.A. and Drs. C. Nathamuni Naidu and K. V. Swamy were re-elected as the alternate representatives.

The open session of the conference was held at 6 P.M. when the following resolutions were passed:

RESOLUTIONS

1. This Conference requests the State Government as well as the Central Government to recognise the medical practitioners in modern medicine as essential in respect of preference to permits to buy transport vehicles, food products and drugs, buildings, accommodation, foreign travel, import of essential instruments and admission of children into medical colleges.

2. This Conference resolves to request the Government to do away with the distinction made in the maximum of the scale of pay of Assistant Surgeons as per the revised scales between the graduates and licentiates and to extend the maximum limit of the scales of the licentiates to Rs. 575/- as for graduates since the duties discharged by both the classes of medical officers are one and the same.

3. This Conference resolves to name the Madras State Branch of I.M.A. as "Tamilnad State Branch of I.M.A." in view of the change made by Government of the name of the Madras State to 'Tamilnad' and to amend the rules of the Madras State Branch accordingly.

4. This Conference resolves to request Government to grant to the existing licentiates in service equal status as Assistant Surgeons so as to enable them to serve as Senior Health Officers in the Public Health Department and that the discrimination between raw graduates and licentiates may be avoided in the appointment of Health Officers by the Director of Public Health.

5. This Conference resolves that each branch under the jurisdiction of the Madras State Branch I.M.A. should undertake to conduct the Annual Conference on a rotation basis. The branches deciding to do so may kindly put in their invitations during the open session of the conference. The venue and time of the next two annual conferences should be fixed up at the present session of the conference.

6. This Conference resolves that to prevent unauthorised sale and consequent misuse of dangerous drugs, the Government should be requested to restrict the sale of schedule H and L drugs only to the Registered Medical Practitioners and to penalise the druggists who contravene this rule.

7. This Conference resolves that the Government may be requested to retain and restrict the medium of instruction to English language in all colleges wherein scientific and technological subjects are taught.

8. This Conference resolves to request the Medical Council of India and the Government of India to have only one common Medical Register for the country in alphabetical order and to do away with the present system of different schedules in the Medical Register.

BRANCH NOTES

BALLIA BRANCH—A meeting of the Branch was held on 7th April 1961, to observe the World Health Day. Chairman, Municipal Board, Sri V. N. Singh presided. A talk on various aspects of accidents and their prevention was held.

Dr. J. Singh introduced the subject. Sri S. W. Pande, S.P., spoke on road accidents and their prevention; Dr. H. M. Bhatnagar on home accidents. Dr. A. S. Gupta on town and village accidents and Dr. Roy on accidents to eye and factory accidents and their prevention.

Dr. Ved Ratna concluding said that most of the accidents could be prevented if a little care had been taken before.

BANARAS BRANCH—The World Health Day was observed on 7-4-61 jointly by the Branch and the local Health authorities. A symposium was held at 6 P.M. at the Association's premises. The symposium was presided over by Dr. K. P. Tiwari, President of the Branch and the following speakers took part in the symposium :

1. Dr. G. S. Misra, Civil Surgeon, inaugurated the symposium and invited the attention towards proper care for checking accidents. 2. Prof. Rajaram Shastri of Kashi Vidyapith, Varanasi, spoke on mental and physical conditions responsible for accidents and care to improve them. 3. Prof. Ramgopal of Kashi Vidyapith, Varanasi, on social evils responsible for accidents. 4. Shri Yamuna Pd. Sharma, City Dy. S.P., Varanasi on road accidents. 5. Dr. Dhirendra Singh on accidents at home. 6. Dr. Bhatnagar, School Health Officer, Varanasi, on hazards for the school-going children and accidents related to them. 7. Dr. B. C. Saxena, T.B. Specialist, S. S. P. G. Hospital, Varanasi, spoke about lurking symptoms of T.B. among the patients and their proper exposition at proper time.

After the symposium a film on the subjsct was screened by the Information Department, U.P.

BARAMATI BRANCH—A meeting was held (date not given) to elect new office-bearers of the branch. Dr. P. N. Narawane presided. Dr. K. R. Kunchur was elected president for 1960-61, Dr. B. S. Neurgaonka as secretary and Dr. B. D. Sidhaye as joint secretary. The members met 4 times to discuss antituberculosis and antileprosy programmes. Family Planning was discussed and a vasectomy camp was opened where 63 cases were operated.

A meeting was held on 7-4-61 to celebrate World Health Day in collaboration of the Mamlatdar of the Taluka. A public meeting was held where Dr. P. N. Narawane presided. Dr. Pale, Shri Wagh and Sri Kulkarni spoke on this occasion. Dr. Narawane in his presidential speech stressed on the need of educating the people and making them more responsible citizens so that there would be automatic curb on the number of accidents.

BAREILLY BRANCH—The Branch celebrated World Health Day on 7-4-1961. A meeting was arranged at the District Hospital O.P.D. in the evening at 8 P.M. There was a gathering of about 60 members of the branch and so many others from the general public who had already been extended an invitation for the same.

Dr. A. D. Bhandari was in the chair, the meeting lasted for about 2½ hours ending at 10-30 P.M., amongst the speakers were particularly Dr. B. B. Rai, Dr. A. H. Khan, Dr. J. P. Bansal and Dr. Pratap Singh.

Dr. B. B. Rai firstly read to the house the circular of the W.H.O. and then spoke on the subject very elaborately dealing with every aspect of it.

Dr. A. H. Khan spoke on the subject with special reference to the medical accidents. He also very well explained to the people various precautions to be taken to avoid such occurrences.

Dr. J. P. Bansal explaining the implication of the word accident very beautifully described the sequence of events taking place in an accident, correlating the forces at work behind such occurrences, later he dealt with different aspect of accidents.

Dr. Pratap Singh spoke on "Psychopathology of accidents". He very well explained the psychological aspect behind such occurrences.

BHOPAL BRANCH—Dr. M. M. Arora, President, addressed a well attended weekly meeting of Rotary Club of Bhopal on accidents and its prevention. During the course of his very interesting talk, Dr. Arora laid emphasis on the preventive aspect of accidents and by giving examples of the common day-to-day accidents in the home, street and industry he pointed out that by a little care, majority of the accidents could be averted. Dr. R. K. Bhargava, hony. secretary of the branch took part in an interview talk on A.I.R. Bhopal-Indore on April 7, 1961 on the rural programme. He mentioned the role of W.H.O. and the work being done by this organisation. Dr. Bhargava stressed that the belief that accidents occur by mere chance was not correct and by taking precautions and giving necessary education to masses most of the lives could be saved, which are lost due to accidents in home and street.

DELHI STATE BRANCH—The Annual General meeting of the branch was held on 4-2-1961 in DMA Hall, Daryaganj, with Lt. Col. Amir Chand in the chair. The Hony. Secretary Dr. G. D. Dhalla read the annual report followed by the reports read by the Hony. Librarian, Dr. R. P. Khera, D.M.A. Representative on T.A.C. Dr. Brij Mohan, Hony. Treasurer Dr. K. C. Jain and Hony. Director D.M.A. Health Insurance Scheme Dr. R. C. Goulatia.

The house stood in silence and passed a condolence resolution on the sad demise of Dr. S. B. Mathur, Dr. Amar Nath Sharma, Dr. Sunder Singh.

The accounts for the year 59-60 along with the auditor's report were read and approved. The budget

estimates for the year 1960-61 were also passed by the house.

The following office-bearers were elected for the year 1960-61 :

1. Dr. Prakash C. Bhatla, president, 2. Dr. A. C. Narula, vice-president, 3. Dr. G. D. Dhalla, hony. secretary, 4. Dr. Daljeet Singh, hony. jt. secretary, 5. Dr. K. L. Tuli, hony. asst. secretary, 6. Dr. R. P. Khera, hony. librarian, 7. Dr. Mohindra Nath, hony. treasurer.

In his address the retiring president, Lt. Col. Amir Chand mentioned the progress of negotiations carried on with the Pharmacists Association. He told that Sunday full holiday was welcomed by the profession and they were happy over it.

Regarding medical practice in residential areas he stressed the importance to carry on the efforts and commended the work done so far in this regard. The subjects discussed this year in scientific lectures were of considerable importance and covered most of the branches of medical science.

He requested and invited the women members to take more active interest in the affairs and management of the Association. He said "I do not understand why more of them do not make a bold bid to capture the offices including that of the president, to which he was confident they will bring lustre. To conclude he paid tributes to the members of the team he had the proud privilege to captain. He said that "if you want the Association to function efficiently and effectively change your president every year if you like, but please do not change your office-bearers at too short intervals. It takes a member about a year to settle down his post. Once you have selected the right type of men give them time to show their work and do real type of service."

Dr. Prakash C. Bhatla, the incoming president of the D.M.A. assured the house that he would do his utmost to complete the new building in time. He also drew attention of the house to the D.M.A. Health Insurance Scheme and assured that every effort will be made to make it successful.

Dr. H. N. Shivapuri, President, I.M.A., who had kindly graced the occasion by his presence, congratulated the president-elect Dr. P. C. Bhatla on his election. He said the retiring president Lt. Col. Amir Chand had done commendable work during his tenure. He further said that this branch of I.M.A. was a great asset to the I.M.A. as it was a training ground for the office-bearers of the Central Office of the I.M.A.

World Health Day was celebrated in DMA Hall, Daryaganj, on 7-4-61. There was a large number of members attending the function, and a large number of doctors belonging to various institutions were also present. The following speakers took part on the subject of accidents and their prevention : 1. Dr. C. Mani, W.H.O. Regional Director, New Delhi, 2. Dr. R. P. Chakrabarty, Orthopaedic Surgeon, Irwin Hospital, 3. Dr. N. K. Mehra, Surgeon, and 4. Dr. Bhattacharjee.

Dr. Mani explained how the day was celebrated and how it was chosen to be celebrated like this. Dr. N. K. Mehra explained his experience of the other countries about the control of accidents. Dr. R. P. Chakrabarty then described the accident units working in our hospitals. He told that motor vehicles have emerged as one of the biggest killers of modern times. It is estimated that about 1,000 people are killed every day on the roads of the world. He emphasised the shortage of doctors and hospital beds as chronic. By preventing accidents pressure on medical facilities could be greatly relieved. He said that best way to prevent accidents of all types is to create awareness about their causes.

Lt. Col. Amir Chand in his observations on the subject summed up and described how the problem of accidents in traffic and domestic life should be dealt with. He explained the role of general practitioners in making the people conscientous of various pitfalls in life and described the clinics of general practitioners as ideal first-aid units which should necessarily be equipped with and deal with large number of domestic and traffic accidents. He laid stress on the efficient ambulance and telephone services and expressed a desire that in the rapidly growing country we should have separate departments for each type of accidents, i.e., burn units, orthopaedic units, plastic surgery units and head injury units, etc., etc. Dr. Bhattacharjee stressed that a qualified anaesthesist must be added to every accident unit.

DEOLALI BRANCH—In a joint transaction with Station Hygiene Organisation the branch celebrated WHO Day on 7-4-61 at Sarvatra Hall. There was film show on the subject of accident on roads, factories, etc. and how they can be prevented.

DHANBAD BRANCH—The inaugural function of the Health Week was held on 19-3-1961 at Jharia Raj H. E. School, the meeting being presided over by Major (Dr.) H. C. Mallick.

Sri S. N. Sharma, Dy. Commissioner, inaugurating the function stressed upon family planning in his illuminating speech and said that it was all the more necessary as even Dhanbad, although the smallest district in Bihar, registered the growth of population to the tune of about 26·75 per cent as revealed by the last Census. Overpopulation means mass ill health, warned Sri Sharma, and said that inspite of the best efforts by the government and authorities to enhance all round production, the rapid growth of population far outweighed the same, and if population was not checked proportionately, it would be but futile to expect healthy citizens—healthy in mind and body as are irrevocably needed for a prosperous country.

DR. S. N. SHARMA, I.A.S., CHAIRMAN OF THE HEALTH WEEK COMMITTEE DELIVERING THE INAUGURAL SPEECH.

MRS. BAG SINGH, WIFE OF BRIG. K. BAG SINGH, DISTRIBUTING PRIZES TO THE BEST BABIES.

Sri A. C. Bhattacharjee in his welcome address said that the Indian Medical Association has already earned the gratitude of the country for the undertaking of a task of supreme importance like awakening health consciousness of the mass including school children by various means.

Dr. N. P. Tripathi of Patna in his brief speech impressed upon the attending students with various examples and advised them to imbibe Indian culture and to build up their body and mind free from any diseases.

Sri Ranglal Chaudhury, who presided over the latter part of the meeting due to Sri Sharma's departure for his pre-engagement elsewhere, spoke on the move of the Indian Medical Association in sponsoring Health Week and fostering health consciousness specially amongst students who were but the future guide of the country and, therefore, ought to be sound both bodily and mentally.

Dr. R. Mukherjee, honorary secretary of the local Health Week Committee, who, in collaboration with Capt. (Dr.) S. C. Moitra distributed sweet packets to all the attending students, said that he was pained to find students and others taking to food in open shops beside the roads in filthy conditions which were, after all most deterrent to the health and advised all to take to cheap yet nutritious fruits available easily in the respective seasons as well as to take to boiled things which were all contributory to good health.

Dr. B. N. Hazra, Convener of Dhanbad Sri Competition, advised the students to take physical exercises so that they might compete with the Dhanbad Sri Competitions in future. He also appealed to the authorities concerned, i.e., the guardians, the state government and school management to provide for cheap midday meals which are essential for the health of school pupils.

Mrs. S. N. Sharma, wife of Dy. Commissioner, distributed the prizes to the winners in the Dhanbad Sri Competition.

Dr. Sacchidananda Mukherjee in collaboration with Drs. T. D. Roy, S. P. Banerjee, S. K. Mukherjee undertook the examination of the health of school children of Jharia Raj H. E. School numbering about 500 and was very critical about the poor condition of the health of average students. Dr. Mukherjee was disappointed to find that it was due either to ignorance or reluctance boys have got bad oral hygiene and for which Dr. Mukherjee suggested the following remedial measures: about personal health or hygiene. Major percentage of (i) a little care of personal hygiene, (ii) proper diet, (iii) midday meal, (iv) pure and good water both at home and school, (v) proper exercise, (vi) periodical survey of health, (vii) awakening health consciousness and cleanliness as well as interest amongst the pupils and providing incentive by awarding prizes occasionally to the best ones.

Health Week meetings were held at Bagsuma (Gobindpur) Tundi and Hariharpur (Topchanchi) villages respectively on March 20, 21 and 23. Drs. R. Mukherjee, S. C. Moitra, L. C. Mittra, B. N. Hazra addressed the gatherings in these meetings on health matters .

On 22nd, Health Week meeting and Baby Show was held at Salucchapra village, presided over by Major (Dr.) H. C. Mallick. Dr. R. Mukherjee in his impressive speech advised the gathering to take proper care of the babies so that they might become healthy citizens of the country. Dr. Mukherjee also dealt upon preventible diseases together with how to combat and overcome them by taking primary vaccination, inoculation, cheap essential food and fruits and other diet etc.

Smt. Geeta Nursing distributed about 250 consolation prizes to the babies in the form of shirt and frock, besides special prizes to 18 babies who were considered best. The prizes donated by Sri Mohan D. Sonetta for the best baby of the show was also awarded.

On March 24, another Baby Show was held at Kustore Club premises. The meeting having been presided over by Major (Dr.) H. C. Mallick. Dr. R. Mukherjee, Honorary Secretary of the local Health Week Committee spoke on the importance of holding Baby Show and advised the parents how to keep babies healthy by providing them with cheap yet nutritious food including fruits and free from diseases by taking to timely vaccination, inoculation, etc.

Mrs. Bag Singh, wife of Brig. K. Bag Singh, Coal Mines Labour Welfare Commissioner distributed 18 special prizes of the Health Week Committee to the babies of the workers and 9 special prizes contributed by the Lions Club Kustore, to the best babies of the staff and Champion Cup donated also by the Lions Club to the best baby of the staff and a special prize to the best baby of the workers.

District Medical Conference and Refresher Lecture were held on March 26 at 4-30 P.M. at the Central Hospital, Jagjiwan Nagar, Dhanbad. Major (Dr.) H. C. Mallick presided.

The Conference was inaugurated by Padmabhusan Dr. Tridib Nath Banerjee of Patna. In course of his speech Dr. Banerjee touched upon every aspect of medical science including diseases and their remedial measures past and present. Dr. Banerjee pointed out as to how human beings are becoming gradually resistant to many antibiotics in support whereto he gave example of the penicillin, etc. "What however we want", said Dr. Banerjee, "is balanced diet". Protein is most essential for human body. Dr. Banerjee said, it would be wrong to advise people to shun mustard oil, rather it would be befitting to advise them to shun present day ghee and vegetable product and take to pure mustard oil, chana, chatu etc. as many of them possess protein substance which is essential for bodily growth etc.

FAIZABAD BRANCH—A meeting of the branch was held on 7-4-61 to observe World Health Day in the Municipal Hall.

About 150 persons from the Government officials, Bar Association and the public attended.

The following speeches were made as noted below:

1. Introduction—(what is World Health Day) (in Hindi)—Dr. S. K. Mukerji, 2. Where Risks are greatest (in English)—Dr. P. S. Jain, 3. Why and how of accidents (in English)—Dr. B. N. Gupta, 4. Factory accidents (in Hindi)—Dr. D. Bhatt, 5. Roll of first-aid in accidents (in Hindi)—Sri R. S. D. Misra, 6. Education the best shield against accidents (in English)—Dr. Y. D. Kapur, 7. How to protect your family from poisoning (English)—Dr. R. K. S. Misra, 8. President's remarks on accidents—Sri P. N. Chaturvedi, 9. It was proposed to distribute pamphlets showing the methods to prevent accidents to the public.

KHATAULI BRANCH—This branch was established in April 1960. Dr. Shankar Lal was elected president, and Dr. Mahendra Prakash its secretary. The branch has got eight members on the roll. There have been regular monthly meetings of the branch. On 30-4-1960 Dr. R. D. Bansal spoke on Diabetes mellitus.

On 30-5-1960 the meeting was held at the residence of Dr. B. R. Agarwal. The subject of Pruritis was discussed. On 27-7-1960 the meeting was held at the residence of Dr. Parmananda. Dr. P. S. Bajwa, Medical Officer, Civil Dispensary spoke on diet in health and disease. On 14th January 1961 interesting films were displayed.

KANPUR BRANCH—W.H.O. Day was celebrated on 7th April, 1961 at the Temple of Service. Dr. Miss Chandra Kanta Rohatgi presided. Dr. A. K. Gupta, orthopaedic surgeon, G. S. V. M. Medical College, Mr. B. B. Chakervarti, secretary, Automobile Association, Kanpur, and Mr. B. K. Trehen spoke on accident and their prevention. Dr. Satwant Singh thanked the speakers and explained the significance of W.H.O. day.

JALNA BRANCH—A meeting was held (date not given) to bid farewell to Dr. S. K. Deshpande on the eve of his departure to Ottawa for higher studies. He will stay there for 2 years and then proceed to Edin-

MEMBERS OF THE JALNA BRANCH, I.M.A., BIDDING FAREWELL TO DR. S. K. DESHPANDE.

burgh for F.R.C.S. A dinner was arranged on this occasion.

NELLORE BRANCH—An ordinary meeting was held on 18-3-61, Dr. Mrs. M. Bochr presiding.

A resolution of condolences on the sudden demise of Dr. E. Sundararami Reddy was passed all the members standing.

After tea Dr. R. Subrahmaniam, Government General Hospital, Madras, gave a lecture on Recent advances in drug therapy of hypertension.

About fifty members attended the meeting.

NIZAMABAD BRANCH—A meeting of the Branch was held on 31-3-1961 at District Hospital, Nizamabad. Dr. Gulam Nabi was in the chair. A symposium on Poliomyelitis was held. Dr. Razzack gave in detail all the aspects of the disease. Dr. Rama Rao told about Prophylaxis and sanitation. Dr. K. A. Rao told about surgical treatment of Poliomyelitis. Dr. Gulam Nabi demonstrated a case of Pseudomucinous Ovarian Cyst in a female, bilateral and operated successfully.

Dr. Miss Manoramma Asthana entertained the members to dinner.

RAE BARELI BRANCH—A meeting of the Branch was held on 7-4-61 at Rae Bareli Club Civil Lines to observe the World Health Day. Many prominent citizens and officials were present. Dr. K. K. Roy Chowdhury, Civil Surgeon, gave an illuminating talk on accidents and their prevention.

The function ended with a tea party.

UTTAR PRADESH STATE BRANCH—The Working Committee met on 27-2-61 at Allahabad in the I.M.A. branch premises. Dr. B. N. Bhalla presided. Members present numbered 17.

The minutes of the last meeting and the quarterly accounts up to December 1960 were adopted.

Condolence was expressed at the death of Dr. (Mrs.) B. A. Singh, Bijnor; Mrs. A. B. L. Mathew, Bareilly; Dr. Sewa Ram Bhatnagar, Bareilly; Dr. Y. P. Seth, Pilibhit.

The Central circular regarding revision/abolition of Patent Law was discussed. The Committee was of opinion that the retention of patent system was not in the interest of the country.

Dr. H. N. Shivapuri, Lucknow, and Dr. Bhola Nath, Varanasi, were chosen as delegates to the World Medical Association to be held in Rio de Janeiro in 1961 with Dr. Swamy, Madras, and Dr. Rangachari, Hyderabad, as alternates.

A sub-committee was formed to organise the scientific section of the annual conference of U.P. State branch.

The hony. secretary read the letter from Pilibhit branch appealing for donations to the widow of late Dr. Y. P. Seth for the education of three minor children. Dr. (Mrs.) Chhoteylal of Farrukhabad offered to bear the expenses of educating the eldest child for 5 years. The committee thanked her for her generosity.

VISAKHAPATNAM BRANCH—A meeting was held on 22-3-61 with Dr. V. S. Raghunathan in the chair. A cinema show on Diabetes Mellitus was screened. Later two rare cases of Ramsay-Hunt's Syndrome (from the wards of Dr. V. S. Raghunathan) and Liomyoma Cutis (from the wards of Dr. P. Sivakrishnia) were demonstrated.

WARANGAL BRANCH—A clinical meeting was held on 12-3-61. Dr. T. S. Murthy presided. Dr. M. V. R. Acharyulu demonstrated a case of Open Safety-pin removed from the Oesophagus and two cases of Nasopharyngeal Fibromas. Dr. Srinivasan Rao gave a talk on Bone Injuries in Children. Dr. R. V. Subrahmanyan was the host and arranged for the tea.

WEST GODAVARY BRANCH—A meeting was held on 5-11-1960, Dr. D. Rajasekhara Rao presiding. The meeting condoled the death of Dr. G. Batreddy of Polavaram, a member of the branch for many years. The government's action on presumed professional misconduct without judicial enquiry was condemned.

A meeting was held on 18-12-1961 at Kovvur Dr. D. Rajasekhara Rao presided. Family Planning Day was celebrated. A public meeting was held where Dr. D. R. Rao and Dr. Srirammurty spoke on the Importance of Family Planning. In a clinical meeting held later, Dr. P. Kotiah of Andhra Medical College spoke on Domiciliary Treatment of Pulmonary Tuberculosis.

A meeting was held on 8-1-61 at Narasapur. Dr. Subrahmanayam of Government General Hospital presided. Dr. A. Venugopal and Dr. Pillai spoke on Stricture Urethra and Cardiac Neurosis respectively. Dr Subrahmanayam spoke on Recent Advances in Surgery for Deafness.

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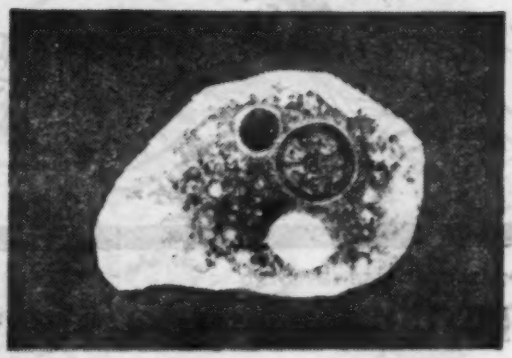

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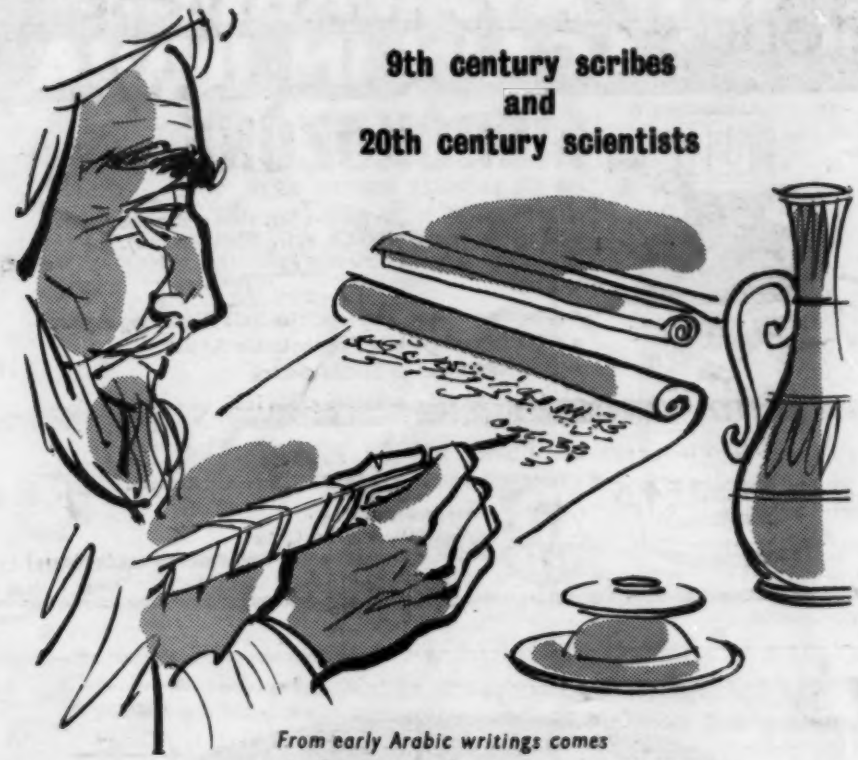

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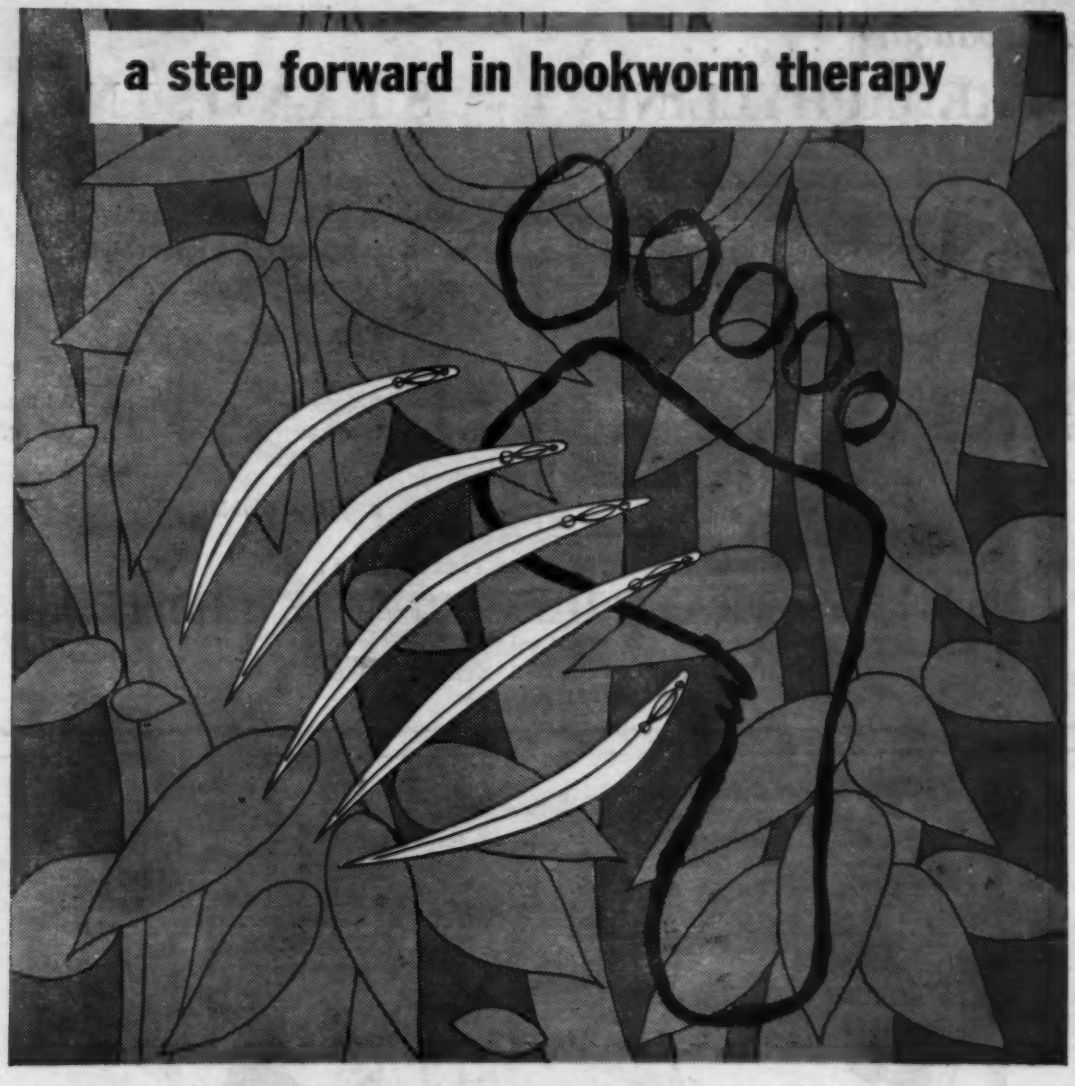

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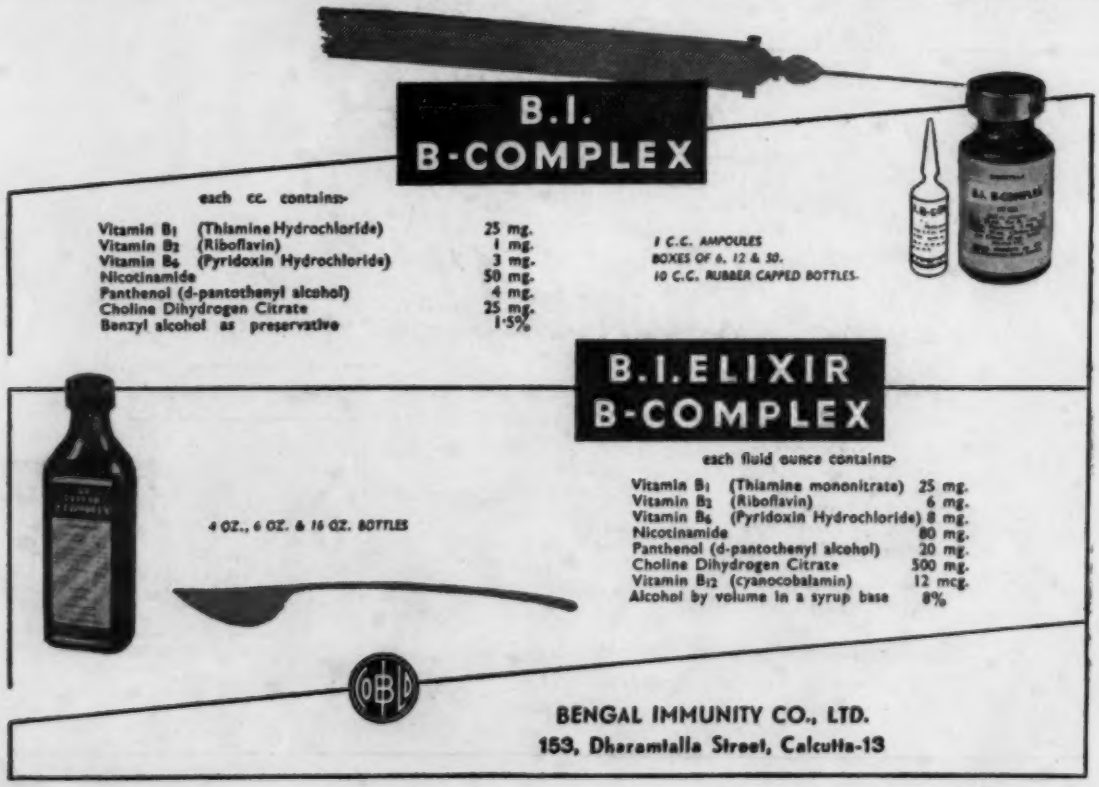
in packs of 6, 12 and 50
500 mg. in 10 ml.
250 mg. in 5 ml.
BENGAL IMMUNITY CO., LTD.


B.I. B-COMPLEX
each cc. contains-
Vitamin B1 (Thiamine Hydrochloride) 25 mg.
Vitamin B2 (Riboflavin) 1 mg.
Vitamin B6 (Pyridoxin Hydrochloride) 3 mg.
Nicotinamide 50 mg.
Panthenol (d-pantothenyl alcohol) 4 mg.
Choline Dihydrogen Citrate 25 mg.
Benzyl alcohol as preservative 1·5%
1 C.C. AMPOULES
BOXES OF 6, 12 & 50.
10 C.C. RUBBER CAPPED BOTTLES.
B.I. ELIXIR B-COMPLEX
each fluid ounce contains-
Vitamin B1 (Thiamine mononitrate) 25 mg.
Vitamin B2 (Riboflavin) 6 mg.
Vitamin B6 (Pyridoxin Hydrochloride) 8 mg.
Nicotinamide 80 mg.
Panthenol (d-pantothenyl alcohol) 20 mg.
Choline Dihydrogen Citrate 500 mg.
Vitamin B12 (cyanocobalamin) 12 mcg.
Alcohol by volume in a syrup base 8%
4 OZ., 6 OZ. & 16 OZ. BOTTLES
BENGAL IMMUNITY CO., LTD.
153, Dharamtalla Street, Calcutta-13

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